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NEW ORLEANS
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INDEX TO VOLUME SEVENTY

JULY, 1917,

TO

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J. A. STORCK, M. D., Tulane University of Louisiana.
R. P. STRONG, M. D., Harvard University.
ROY M. VAN WART, M. D., Tulane University of Louisiana.

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No. 1

EDITORIAL

A TULANE UNIT.

After several months of uncertainty, as to the purposes and as to the status for service of the Unit, the Base Hospital (No. 24) organized as a representative Tulane group is ready.

Before war was declared this Unit was enrolled by Dr. Rudolph Matas, as its Acting Director, and included most of the Tulane Faculty and a large number of the student body. It is worthy of notice that the entire Sophomore Class volunteered for any kind of service and the Freshman Class began organizing an Ambulance Company. The majority of the Junior Class had already been signed up in the Red Cross Unit.

The entire plan had to be revised when the Council of National

Defense, cöordinated with the Federal service, issued the most urgent appeal to all medical schools to hold students at their classes and to conserve the efficiency of the faculties by maintaining a working-teaching staff.

When it was apparent that the organizer and Acting Director of the Unit, Dr. Matas, would be unable himself to go to France, the Director General of the American Red Cross named Dr. John B. Elliott, Jr., head of the Department of Medicine at Tulane, as the Director, early in June. The Unit had already been practically completed in its medical and surgical personnel, and at this time is nearly ready to go and is awaiting orders.

There are already many medical graduates of Tulane in the Army Corps and in the Medical Reserve Corps, and more joining all the time. When the list is complete and the forces in France, Tulane may be the slogan on many fields.

In reviewing this particular endeavor of Tulane University it may be becoming to refer to this evidence of a duty to the community this institution represents. There may be pride among Tulanians at the thought that the New Orleans Unit will go, the first from the far South, carrying the honor of the city, State and of the Southland, and that the Unit goes headed by some of the best of the Faculty of the School of Medicine, which for nearly a century has built a foundation of which the City of New Orleans itself may be proud.

When the call comes, may the way of the Tulane Unit be in the lines of service, duty, and honor, and let our hopes for their success and their safe return be fruitful.

THE DUTY OF THE DOCTOR IN THE MEDICAL RESERVE CORPS.

At the request of the New Orleans Examining Board for the Reserve Corps, we gladly publish the following:

1. The local Board is prepared to examine candidates for the Medical Officers' Reserve Corps and candidates for the Dental Reserve Corps. Applications should be made to Major Isadore Dyer, M. O. R. C., postoffice box 770, New Orleans, La., and necessary forms and instructions will be supplied promptly.

2. All medical practitioners registered under the selective draft

are advised to apply for the Medical Officers' Reserve Corps. Otherwise, if drawn for service, they may be detailed to positions with the Hospital Corps as non-commissioned officers, or even as privates. If successful as candidates for the Reserve Corps, they are commissioned with the rank of First Lieutenant, with a pay of \$2,000 a year, and will be detailed to training camps for medical officers as soon as their commissions become effective. After three months of training they will be assigned to active duty. Pay begins as soon as they are detailed to the training camps. If exceptional aptitude and efficiency are shown at the training camps after three months of training there may be prompt increase in rank.

3. Other physicians under the age of forty should consider the duty of service to the country at this time. Twenty-five thousand medical men will be needed. The sooner they fall in line, the easier the task of the War Department will be. Up to June 1 only about 2,200 commissions to medical officers had been issued and accepted. In other words, less than ten per cent of the required number had qualified.

It may become necessary to use military measures of conscription to get the necessary number of medical men. As yet, the medical profession does not seem to be awake to the need of medical officers or to the duty of the medical men to serve. Men of all other professions have volunteered by the tens of thousands. Medical men cannot afford to have their profession classified among the slackers.

No medical man with wholly dependent families is expected to go into the Reserve Corps. All single men, or men with no such obligations, under the age of forty, or even fifty, are expected and should respond before steps are taken to register them for service.

At the present rate of application it will take nearly four years for the needed medical personnel. The full number should be made up within six months.

If you are eligible you should act NOW.

HOW OLD ARE YOU?

The Department of Commerce propounded this question on June 5: How many of those to be registered for the selective draft could *prove* their ages? How many actually produced certificates of birth registration?

No more timely argument could be presented for a proper birth registration, and the object-lesson should be enough to inculcate wisdom, and consequent action, in those communities now so negligent of this matter.

The discussion in the bulletin is so pertinent we believe it important to quote largely:

Never before has the United States Government been so interested in knowing the exact ages of the young men of the land. Never before has the public mind been so ready to grasp the great importance of birth registration.

In ordinary times the continual demands upon our attention, first by one problem and then by another, easily explain the sidetracking in many States of the problem of **complete birth registration**. It is not because the people believe birth registration unimportant, but the problem has simply been crowded to one side.

When the story is told of the American arrested in London as a German spy, unable to obtain a birth certificate because his birth had never been recorded and because the doctor had died, but finally saved by the discovery of an old letter which told of his birth, the people grasp the point and agree that births should be registered; but, as the story relates to somebody far away, and probably never heard of before, the point is soon forgotten and no wave of strong public opinion is really started. So, too, the statements that birth records are needed to prove men of voting age, to establish pensions, to establish rights of inheritance, and to determine who is entitled to the protection of our flag—these statements are too apt to be treated as old axioms which call for no immediate reform.

The need for complete birth registration is recognized, but the inertia of the people prevails. Thus, in ordinary times, the problems of civilization are settled slowly, but not so in times of war or after great catastrophes. Then the bitter experience brings quick results.

The city devastated by fire is so rebuilt as to guard against a second conflagration. The terrible loss of life which follows overloading an excursion steamer results in more stringent laws and in greater safety for travelers. And to-day, this **war** call for the registration of our young men brings home the need of birth records to every community in the United States.

How old are you? Can you prove that you are under 21 or over 31, or must you be suspected of having falsified your age? Perhaps a fond mother, to save her son from the trenches, may swear that he is below the age limit; perhaps, years later, proof will be found this man should have registered; imagine his chagrin at not having done his part in the war. Perhaps there are slackers who, in the absence of birth records, may be able to shirk registration. Surely, on this day the need of birth registration is evident to all.

May we not hope that this call for the registration of all men between the ages of 21 and 31 will awaken the people from their lethargy and lead at once to this forward step in our civilization—the **registration of every birth?**

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

NOTES ON CLINICAL OBSERVATIONS AND REACTIONS IN LEPROSY.

By JAMES A. HONEIJ, M. D., New Haven, Conn.

The purpose of this paper is to record such observations and reactions in leprosy as I have not previously reported and which may be of some value to observers elsewhere.

INITIAL LESION OR SYMPTOM.

In regard to the question of the initial lesion or symptom in leprosy, the following were first noticed by the patients who have been under treatment: Small nodule on right upper eyelid accompanied by some redness of the lid; pain in hands, with swelling; less sensation to touch in left lower leg than right; swelling of left hand; pain in feet, with slight swelling; small nodule on right shin; stuffiness in nose, with difficulty in breathing; loss of sensation in both hands; pain in right foot and swelling; darkening color of skin; indefinite pains and tired feeling; discolored areas on legs; small hard nodule, left ankle, with occasional swelling of foot; small nodular swelling left side of nose and forehead. In one case symptoms confused with syphilis, and in two cases no history of symptoms obtainable. Pain and swelling and the appearance of a small nodule occurred, therefore, in four cases, being the first symptoms and lesions noticed.

In no single instance in these cases is there any suggestion of the original mode of infection.

OCCUPATION AND INFECTION.

Regarding the possible infection from the occupation in which the patients were engaged, no information of any value can be obtained. There is one brushmaker, one leather-worker, three laundrymen, one cook, one dishwasher, two laborers, one gardener, one clerk, one traveling salesman, two housewives, one domestic, one teacher, one student, and one woman, a public character, and, just lately a sailor.

HEREDITY.

As to so-called heredity taints, the disease occurred only in the immediate family of two cases—a Greek, who has for three generations had leprosy in his family, and another, a native of one of the Portuguese islands, who has the disease only in his immediate family.

PREDISPOSING DISEASES.

Syphilis has been considered in the past to have some bearing on the incidence of leprosy, and tuberculosis has also been thought to bear a close relationship. Among the patients here, five have had syphilis, none tuberculosis, five smallpox, two gonorrhea, two malaria, four "fever," two measles, and two chicken pox.

INCUBATION PERIOD.

Absolutely no evidence regarding the incubation period is obtainable. Various periods have elapsed from the time the first signs were noticed by the patient to the time of his apprehension; that is to say, from the time when the signs were apparently sufficiently noticeable for diagnosis by the hospital physician. Seven years was the longest and one year the shortest time that had elapsed between above-stated periods. The average was two years and seven months. If it is presumed that the same period was necessary for the development of the first lesion from the time of initial infection, it would give a period of five years and two months, agreeing fairly well with the opinion expressed abroad that the incubation period is about eight years.

Scalp Lesions: Lesions of the scalp—contrary to the general belief—do occur. Ulcers occurred in four patients, and in two patients fairly frequently. The ulcers healed readily, but with resulting loss of hair.

Oral Cavity: The oral cavity is very early affected. In none of the cases, even in the cases with signs barely diagnostic of leprosy, has the palate failed to show some inflammation and ulceration, usually situated on the sides of the raphe line, close to the uvula. The structures of the throat around the fauces have not been spared, and, although some cases are entirely healed, all the structures have at some time during the course of the disease been involved. In some of the healed cases there has been total destruction of the pillars and contiguous tissue, giving a smooth, cave-like opening appearance to the throat.

The tongue in some of the cases showed marked hypertrophy of the raphe and papillæ, with an increased depression of the groove. There is apparently little, if any, change of the gums or teeth.

Laryngeal Structures: The laryngeal structures, both the cartilage, mucous and submucous tissues, are attacked in most cases. In the nodular cases practically no change is noticed in the voice until ulcerative processes begin. In three cases, which later succumbed to the disease, the larynx was so much affected that it was often impossible to understand the speech of the patients. In one case death was partially due to suffocation by spasm on account of the extensive ulceration of the larynx and upper part of trachea. Of the sixteen nodular cases, the larynx was markedly affected in six patients, who died; of the remaining ten, five are fairly seriously affected and the remaining five not at all, though two of them are advanced cases. In only two cases, apparently, is the trachea attacked, and then only in its upper third. The lungs in none of these cases are affected by leprosy.

Intestinal Canal: The esophagus, from evidence obtained by autopsy, showed no change. The stomach, excepting for the common complaint of indigestion, is negative. Inflammation and ulceration of the intestines, evinced by marked diarrhea and the recovery of the bacillus from the stools, was supported by autopsy. Diarrhea has been severe and constant in six cases, but common only in the advanced stages of the disease. Constipation in almost all the patients has proved difficult of treatment. Prolapsus recti, hemorrhoids, and incontinence of feces have been observed. Stomach and intestinal pains are uncommon. The appetite varies and is wholly dependent on the general condition of the patient; in most cases, however, the appetite is good.

Circulation: Thickening of the walls of arteries is apparently not increased, and I am inclined to believe that, on the contrary, is lessened and the vessels less palpable than in normal individuals. The blood pressure was high in only two cases, being 190 and 210. The general range was 140 to 170; this was considered normal for the individual patients. The examination of the blood gave the following approximate results: The average hemoglobin was 69 per cent in 1913 and 70 per cent in 1915. The arterial blood pressure was below 140 in ten cases, in one 150, in one 170, and in one 200, and not determined in three cases.

Table No. 1.
EXAMINATION OF THE BLOOD.

NAME.	L. P.	S. G.	W. G.	F. B.	M. M.	M. G.	Y. T.	I. U.	L. D.	M. C.	H. K.
Type of Disease.....	Nodular	Nodular	Nod.-mac.	Nod.-ule.	Anesthe.	Nod.-ule.	Nod.-ule.	Nod.-ule.	Nod.-Mac.	Nodular	Nodular
Stage of Disease.....	Advanced	Advanced	Early	Advanced	Fly. adv.	Advanced	Advanced	Advanced	Advanced	Fly. early	Early
Hg.	75%	50%	80%	65%	80%	65%	65%	60%	75%	75%	80%
No. Red C.....	3,608,000	4,062,000	4,608,00	4,056,000	5,944,000	4,968,000	5,472,000	3,432,000	5,360,000	4,448,000	6,040,000
No. White C.....	6,600	4,600	3,400	8,000	4,400	6,000	4,600	4,867	6,000	4,800	5,400
Small Monos	5.09%	0.04%	16.74%	10.98%	8.51%	1.5%	21.03%	4.64%	4.26%	3.92%	2.71%
Large Monos	30.09%	31.83%	31.67%	7.45%	24.01%	29.81%	15.51%	12.65%	44.95%	36.78%	24.03%
Trans.	15.27%	3.26%	....	0.078%	1.21%	2.6%	....	0.387%	....	....	1.93%
Eosino.	2.95%	0.8%	3.16%	6.27%	3.64%	1.8%	1.37%	1.26%	3.48%	1.42%	1.93%
Neutro.	42.85%	63.26%	47.96%	73.72%	62.31%	64.15%	62.06%	81.43%	42.63%	57.85%	69.37%
Basoph.	2.95%	0.04%	0.4%	0.0039%	....	....	....	0.387%	....	....	....
Other Cells	2 Myelocytes 1 Mast	2 Myelocytes 1 Normoblast	1 Myelocyt 1 Mast	1 Mast	1 Myelocyt	3 Myelocytes	2 Myelocytes	2 Myelocytes 1 Mast.	1 Mast.	1 Myelocyt	3 Myelocytes
Condition of Red C....	....	Normal	Normal	Sl. Achrom. and Poikiloc.	Normal	Achromia Sl. Poikiloc.	Sl. Achrom.	Sl. Achrom.	Normal	Sl. Achrom.	Normal
No. Platelets	Large No.	....	....	Great No.	Large No.	....	Great many	Many	....	....	Many
Condition of White C..	Sizes vary	Many large	....	....	....	....	Macrocytosis	....	....	....	....

Reflexes, Orbit: The reflexes—knee-jerks—are exaggerated in all cases.

Inflammation of the orbital tissues is noticed in most of the fairly advanced cases. Conjunctivitis appears fairly early, followed frequently by phlyctenular conjunctivitis. Total loss of sight occurred in three cases; total loss of sight in one eye in one case. Loss of sight is extremely gradual.

Plugging of the tear ducts occurred in one case.

Table No. 2.

EXAMINATION OF THE EYES.

NAME.	TYPE OF DISEASE.	STAGE.	DIAGNOSIS.
F. B.	Nod.-ulc.	Advanced	Presbyopia
I. B.	Mixed	Advanced	Epiphora
L. D.	Mixed	Advanced	Presbyopia
H. K.	Nodular	Early	Mixed astigmatism and myopia
F. P.	Nod.-ulc.	Advanced	Light perception only
W. Q.	Nodular	Early	Phlyctenular conjunctivitis

Special Sense Functions: Inflammation and destruction of the tissues of the nose is well known. The loss of smell occurred in only one case. This fact, considering the severe tissue changes, is quite remarkable. The taste is not impaired; in no single case, notwithstanding ulceration and destruction of tissues and hypertrophy of papillæ and rugæ, was there noticed the lack or diminution of taste. Salty and sour articles are apt to cause unpleasant sensations; the taste for sweet articles was diminished in one case.

Urine: The examination of the urine gave interesting results. Polyuria is evident in most cases and with fairly high specific gravity. Bacilluria occurs in a number of cases; percentages are given in the accompanying chart. Pyuria and hematuria occurred a few times. Solids were increased in all cases. Most of these changes occurred only in the very advanced cases. Cystitis was troublesome in four cases; incontinence of urine in three cases; retention of urine in three cases.

Table No. 2.
DISEASE OF UPPER AIR PASSAGES AND AFFECTION OF SPECIAL SENSES.

TYPE OF CASE.	Nod.	Nod.	Nod.	? Anes.	Nod.	Nod.	Nod.	? Anes.	Nod.	Nod.	Nod.	? Mix'd	Nod.	Nod.	Nod.	Nod.	Nod.
Nasal M. Membrane....	+		+	Sl.	+	+	+	V Sl.	+	+	+	+	Sl.	+	+	+	+
Small Impaired.....	0	0	0	0	+	+	+	0	+	+	+	0	0	+	+	+	+
Ulcer of Lips.....	0	0	0	0	+	+	+	0	+	+	+	+	0	0	0	0	0
Ulcer of Mouth.....	0	0	+	Sl.	+	+	+	+	+	+	+	+	Sl.	+	+	+	+
Ulcer of Tongue.....	0	0	0	0	+	+	+	0	+	+	+	+	0	0	0	0	0
Taste Impaired.....	0	0	0	0	+	+	+	0	+	+	+	0	0	0	0	0	0
Ulcer of Throat.....	+	+	+	Sl.	+	+	+	0	+	+	+	+	V Sl.	+	+	+	+
Hoarseness.....	0	0	0	0	+	+	+	0	+	+	+	+	0	+	+	+	Sl.

Table No. 4.
EXAMINATION OF URINE, SEDIMENT, ETC.

NAME.	Quantity 24 Hours.	Quantity Day.	Quantity Night.	Spec. Gr.	REACTION.	COLOR.	ODOR.	TURBIDITY.	ALBUMIN.
G.	3250 c.c.	1500	1750	1012	Acid	L. straw	Mouse	Slight	Sl. p. tr.
B.	2550 c.c.	1500	1050	1018	Acid	Normal	Urinal	Slight	Present
P.	1500 c.c.	500	1000	1018	Acid	Light yellow	Sweetish vegetable	Slight	Present
B.	1050 c.c.	550	500	1016	Sl. Alk.	L. straw	Ammoniacal	Slight	Present
M.	2500 c.c.	1500	1000	1022	Sl. Acid	Normal	Sweetish vegetable	No	Present
P.	1150 c.c.	600	550	1011	Sl. Acid	Dark sherry	No	No	Present
G.	2200 c.c.	600	1600	1014	Sl. Acid	Pale straw	Slight	Slight	Present
D.	2450 c.c.	1400	1050	1022	Acid	Dark sherry	Urinal	No	Present
C.	1040 c.c.	520	520	1026	Acid	Pale yellow	Ammoniacal	Slight	Present
T.	2500 c.c.	1500	1000	1022	Sl. Acid	Straw	Sl. urin	Cloudy	Present
C.	1120 c.c.	600	520	1021	Sl. Acid	Sherry	Ammoniacal	No	Present
Q.	2100 c.c.	540	1600	1014	Acid	Pale straw	Sl. urin	Slight	Present
T.	2000 c.c.	500	1500	1026	Sl. Acid	Amber	Sweetish vegetable	Slight	Present
U.	2200 c.c.	1200	1000	1021	Acid	Pale yellow	Ammoniacal	No	Present
K.	1740 c.c.	1040	700	1018	Sl. Acid	L. amber	None	Cloudy	Sl. p. tr.

Genitalia: Ulcers of the penis, especially surrounding the urethral opening, are not uncommon. Urethral ulcers occurred in three cases. Partial destruction of tissue occurred in only one case in an advanced stage. Orchitis is a fairly frequent accompaniment of leprosy.

Sterility: Sterility is present in the large majority of cases, but not in the early stages.

Catamenia: In the female patients menstruation is normal, the periods of menstruation slightly decreased.

Mastitis: Mastitis occurred in one case.

Bone Changes: Bone changes occurred in all the cases, as especially shown by Röntgenograms. Just how early these changes occur has as yet not been determined, but a study is being made, the results of which will be reported later.

Body Lesions: Lesions occurring on the body usually appear on the extensor surfaces first; in the case of lesions elsewhere, such as on the face, nose, cheeks, lips and ears, there is a more irregular and constant affection of these parts. The abdomen and back never developed open lesions. A table is presented showing the types of lesions.

Life Period: In all the cases of leprosy that have been apprehended and isolated, the lesions have always been well developed and must be taken into account when considering the length of life from the time of detention up to the time of death, or in the case of those still alive, up to December, 1915. The age of the patient at time of detention and first symptoms will affect the "life period" figures. Two patients of seventy years of age will have in all respects a shorter life, provided the form of the disease is the same, than those of a younger age where the expectation of life is greater. Complications developing in the last stages of the disease were not considered. The shortest life period since first symptoms were noticed was six years, and the longest seventeen years; the average duration was ten years and three months. Two patients are still living who have had leprosy thirteen years, two others eleven years, and one ten years. All these cases are of the nodular type.

Reactions: The tuberculin and Wassermann reactions are here recorded. The luetin test was applied to six patients, and of these only one gave a positive reaction, and this case was also the only one from whom a positive history of syphilitic infection was obtained. Special attention is called to the Wassermann reactions, as in several cases patients with leprosy have been treated at the public hospitals for syphilis, based on the positive reaction found in the majority of leprosy cases.

Table No. 6.
QUANTITATIVE WASSERMANN TESTS
CHOLESTERIN ANTIGEN.

NAME.	TYPE OF DISEASE.	STAGE.	RESULT.	QUANTITY. ANTIGEN.	QUESTION SYPHILIS.
F. B.	Nod.-ulc.	Advanced	+ +	.003	No.
I. B.	Mixed	Advanced	Negative	....	?
M. C.	Nodular	Frly. adv.	+ +	.003	No.
M. G.	Nodular	Advanced	+ +	.003	No.
L. D.	Mixed	Advanced	+ +	.003	No.
S. G.	Nodular	Advanced	+ +	.003	No.
M. M.	Anesthetic	Frly. adv.	+ +	.003	?
L. P.	Nodular	Advanced	+ +	....	No.
W. Q.	Nodular	Early	+	....	?
Y. T.	Nod.-ulc.	Advanced	Negative	....	No.
H. K.	Nodular	Early	+ +	.003	No.

N. B.—A case seen in Connecticut, an early but well defined nodular case, gives the identical quantitative Wassermann result as shown in the above table. It is, therefore, of sufficient interest to suggest to a keen investigator that research along the lines of quantitative analysis may show distinct differences between leprosy and syphilis. These examinations were undertaken with this in mind.

Table No. 7.

TUBERCULIN REACTION.

(Von Pirquet Method.)

NAME	DATE	LOCAL REACTION.	Time After Inoculation.	Duration of Reaction.	Height of Reaction.	Systemic Disturb.	PULSE.	TEMP.
M. C.	April 25	Slight redness	24 hrs.	5 days	48 hrs.	None	Sl. 82	98.8°
Y. T.	April 27	Good react., red, swollen marked induration.	24 hrs.	5 days	48 hrs.	Headache pain	Increased 100	100.°
M. G.	April 27	Slight redness.	28 hrs.	2 days	30 hrs.	None	94	99°
L. D.	April 28	Good react., red, swollen marked induration.	24 hrs.	5 days	32 hrs.	None	106	99.8°
W. Q.	April 28	Slight redness	28 hrs.	1 day	Neg.	None	90	99°
H. K.	April 28	Slight redness	26 hrs.	2 days	30 hrs.	None	80	98.2°

VACCINES AND VACCINE THERAPY.*

By WILLIAM H. HARRIS, M. D., New Orleans, La.

The term vaccine was originally applied to any biological material employed for preventive inoculation against disease. It had its popular application in the material containing virus and collected from the vesicle of cow-pox, so generally and successfully employed in the prevention of smallpox. The term vaccine, now generally utilized for killed or attenuated bacteria, is analogous to vaccine as applied in smallpox prevention, inasmuch as this "vaccine lymph" contains a virus or micro-organism which is inoculated for the purpose of producing defensive agents in the human host. While such is the nature of vaccines in general, much confusion at times seems existent as to the exact identity of a vaccine, and often one finds the terms "serum" and "vaccine" used without an understanding of the vast differentiation of these two biological products. Vaccines, therefore, as made use of, for example, in the prevention of typhoid fever or the treatment of staphylococcal infections and the like, are composed of whole bacteria *per se*, or plus the various materials emanating from or contained within their cell structure. Such entities are termed antigens and serve to produce, by their

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

injection, antibodies within the experimental animal or person thus inoculated. Such defensive substances are formed by the immunity-producing apparatus or somatic cells of the individual, and an immunity thus formed by the activity of the host proper is spoken of as an active immunity and is of the same nature as that immunity against disease acquired by having had that same disease. The term "serum," as now generally employed, is applied to the actual blood serum collected from an animal which has been actively immunized by receiving vaccines, and this serum is then administered to the individual who has played no part in the immune body production, and hence this is termed passive immunity. As, for example, in diphtheria, serum or antitoxin, the horse is actively immunized by receiving repeated injections of vaccines or the bacterial product, namely, toxin, and the serum of this animal containing immune bodies is then administered to the victim of diphtheria. Herein, the horse has received vaccines, or, in reality, the toxin antigen, and the individual the serum or antitoxin. The horse is actively immunized, the patient passively immunized. The active immunity is more or less plurative, or lasts to a considerable extent, whereas the passive immunity is transient and disappears within a short period; for example, two or three minutes.

It behooves me to apologize, in part, for this explanation between vaccines and serums, but it has been my experience that confusion often exists among men whose time has not permitted them to recognize such distinctions, although they are called upon to use these products as part of their armamentarium. I may mention that I recently made an autogenous vaccine for a medical man of much prominence, and he was surprised to find apparent debris within the vaccine which had gravitated at the bottom. This deposit was, of course, nothing but the dead bacteria which constituted the vaccine and became a homogeneous dispersion when the tube was well shaken. A serum is clear, of course, but a vaccine is cloudy from the organisms which, in reality, constitute the vaccine.

Vaccines may be simply killed or attenuated bacteria, they may be the whole bacteria or they may be crushed or pulverized, as in the Besredka antigen or the Gay's modification of the Besredka vaccine, or, again, they may be sensitized—*i. e.*, acted upon by a serum derived from an animal immunized against that same organism. These various modifications are calculated to so bring out certain of the factors, be they toxins, toxoids, toxones, ferments,

precipitinogens, agglutinogens, opsogens, lysogens or amboceptor-gens and the like, to create an antigen best capable of stimulating the production of receptors or antistances to injure or kill the injurious invading micro-organisms, neutralize its toxic or harmful products, or to assist other powers of defense of the offended body.

As a general statement, it may be said that all infectious diseases affecting the human body are eradicated from that body by the defensive army powers contained therein. This defensive army plus the full reserve power and the response of volunteers is provoked by the invasion of the host's enemy, the bacteria. It is the ingress of these disease-producing or pathogenic bacteria that stimulates or occasions the response and production of fighting defensive powers. The efficacy of these substances to produce a highly potent immunity is no longer even a debatable subject. A striking evidence of this phenomenon is shown in the horse, in the production of diphtheria antitoxin and tetanus antitoxin, and in the human, in the results accomplished by vaccination against typhoid or against smallpox.

In the discussion of the usefulness of vaccines one overlooks the foregoing facts, which they are ready to admit, but their objections are usually directed against the use of vaccines in general. I should concur with the opinion of those who object to vaccine to this extent, viz: that the promiscuous use of vaccines, and especially to improperly prepared vaccines, is certainly not in order. As a rule, properly prepared autogenous vaccines are those from which we may expect the best results. We must remember that no therapeutic measure is 100 per cent efficient, and failures based on an occasional case form no justifiable or scientific basis for the oft-times sweeping assertions of their inefficiency and uselessness. There are instances, of course, where the individual is highly vulnerable to infection and wherein the immune apparatus cannot be stimulated. This is the fault of the human mechanism and not the fault of the stimulant employed.

It is my opinion that, in general, autogenous vaccines are indicated in more or less localized infections where bacteremia is not present, such as acne, furunculosis, inflammations of the various bony sinuses, pyelitis, certain anthritides, chronic gonorrhea and bronchial empyema that has been drained, and the like. This opinion is based upon a considerable experience, extending over eight years of hospital and outside laboratory work. The matter

of the employment of vaccines in true bacteremias or generalized constitutional infections, such as typhoid, puerperal septicemia or septicemias in general, is still subjudice in my experience and will require a larger number and variety of cases to formulate a final opinion. Many authorities, however, claim they are efficacious in these infections. We must remember that the use of tuberculin is strongly upheld by many, and tuberculin is, of course, nothing else but a variety of vaccines.

It might be well to mention just here that much prejudice has been excited among the profession against vaccines by the disappointing results often occurring from faultily prepared or selected vaccines, and for this reason autogenous vaccines *properly prepared* are advocated.

One could expatiate at great length upon the subject of vaccines, but time does not permit, nor would further technical details of this subject offer sufficient interest in a general meeting. The subject of most interest to this body, which I have attempted to discuss, is the present status of the practical value of vaccines in treatment and prevention of disease. As a general statement, I might say that vaccines, like so many other innovations injected into our profession, have had their three phases—*i. e.*, a primary stage of optimism, a sort of a cure-all, panacea, etc., period; a secondary stage of pessimism, or no count, failure, novelty, and the like period; and finally a tertiary stage or a period of realism, in which the actual good, the questionable good and the shortcomings are appreciated. I have chosen these stages to express the occurrence rather than the swinging of the pendulum which we hear every year. Perhaps no better comparison of the various mental processes stimulated throughout the early career of a newly launched panacea could be selected than the phases now more or less culminated by time and experience in our dealings with salvarsans—*i. e.*, a tertiary stage or phase of realism is now more or less finally reached, whereas its past existence has experienced optimism and pessimism to a considerable extent.

DISCUSSION ON THE PAPER OF DR. HARRIS.

Dr. T. J. Dimitry, New Orleans: I do not know of any paper that I was more delighted to hear than the one Dr. Harris has presented to us. The thing I wish to bring out first and foremost is with reference to using dead bacteria, for vaccines are dead or attenuated bacteria; hence, do dead bacteria differ greatly from any other protein found in the animal and

vegetable life? and, if the bacteria are dead, what are the chemical constituents of dead bacteria? Here it is that Vaughan and Wheeler and Jobling have gone so far as to make a chemical study of these bacteria, and they find they contain a poisonous substance, which is identical with the protein found in the vegetable and animal life. After all, when you use a vaccine you really and truly are not injecting specific vaccine to obtain the results that you think you are getting. You probably would obtain the same effect with any protein you may use. I have recently been making some studies in this particular line, and my studies have all been clinical. It has been a great surprise to me to note what a magnificent effect I get when I use a non-specific protein. I mean by a non-specific protein that I may use egg albumen, I may use sterile milk, and I inject the protein into the buttocks and get identically the same effect as obtained by many of the vaccines. The proteins are injected with favorable results, and the literature is filled with such reports as I am now reciting.

As early as 1887, Matthes claims that he could procure the same reaction if he injected a little protein as could be obtained when he injected tuberculin. We all know that tuberculin has been used as a curative means for paresis, which is a syphilitic condition, and that typhoid fever has been treated with colon bacilli. After all, the question arises, is there any true specificity obtained from these dead bacteria? They are dead, gentlemen, and most of these organisms, or at least many of them, have little exotoxin. The proteins are really made up of three groups: the primary group, the secondary group, and tertiary group, and it is with the secondary and tertiary groups that we really and truly have the poisonous effect. The whole idea of immunization, infection, sensitization and anaphylaxis is all brought out in the study of proteins.

I would like to recite my own experience with the use of protein for the cure of certain eye conditions. Others are using the same method and are obtaining the same results. I have recently been treating trachoma with a protein. I use milk, and I boil a certain small quantity for about five minutes, and I inject into the buttocks, and it has a most wonderful effect on the trachoma. Friedlander recently reports in one of the medical journals that he has treated forty cases of trachoma with the injection of milk and he has obtained good results. Vaughn has gone so far as to tell us that, by injection of a small and limited amount of protein, continuously repeated, he can make for us a typical chart of typhoid fever. This non-specific therapy is to be a predominant issue soon, if it is not already so. Is there such a thing as a real, true specific therapy? Is there to be a better explanation for our vaccines and their action? This investigation of non-specific protein is to be favorably commented upon, but we should not permit the pendulum to swing too far.

Dr. A. A. Herold, Shreveport: Referring to Dr. Harris' paper, I noticed that, while he did not exactly condemn the use of the vaccin of organisms killed by the old or slow method, he preferred the chemical method. I wish to say that I have seen excellent results by the old or slow method, especially in skin infections.

There is one question I would like to ask Dr. Harris to bring out, although his paper does not deal with any specific conditions, but was merely a paper based on generalities. Dr. Dimitry's discussion would probably make this pertinent. In the *Journal of the American Medical Association* for January 13, 1917, there is an interesting article by a Dr. King on

the subject of the Connellan-King diplococcus. One of these men is a bacteriologist and the other a nose and throat man. They bring out the fact that what we have previously claimed to be an infection with the streptococcus viridans, causing the most troublesome arthritis, is caused by a diplococcus. To make a vaccine of this specific organism will give almost miraculous results. Maybe Dr. Harris can enlighten us on this phase of the subject. That is one instance in which I fear a non-specific protein would not produce the same results, because I have seen these cases of arthritis treated with all kinds of vaccines which contained protein matter and the patients failed to improve.

Dr. Harris (closing): In regard to Dr. Dimitry's timely remarks, I might say we, of course, delve into the subject more deeply than I attempted to do in my paper. It was my aim to try and bring out the processes of immunity, and at the same time to aim in the direction of the question of specificity.

As regards the question of the use of proteins to produce a beneficial effect, I will say that proteins are all dead matter of the bacterium, which is the etiologic factor of the disease, and are always preferable, for the reason that these organisms, although dead, are greatly attenuated. They are capable of exciting in the individual into which they are injected anti-substances in the form of lysins, antitoxins, and so forth. We should take some pus-growing organism, kill the organism, then inject it into an individual. Then, in course of a reasonable time, we should take some of the serum of that individual and test it upon the organism we have injected. We might find we had a specific lysin which would autolyze the bacterium, or would not autolyze the bacillus. In other words, the specificity is definite.

I dare say that, while there is a certain amount of homologous antibodies for the staphylococcus albus organism, still the degree of specificity would be clearly demonstrated in favor of that specific organism. Likewise, in the pneumococcus infections, and so on. Even in pneumococcus infection the pneumococcus is used in the production of a pneumococcus serum with variable results. But it is very clearly shown that not only must we use the pneumococcus, but use the pneumococcus one, two, three or five, and be able to get results in the particular diseases. The pneumococcus injected into the heart must be of that particular strain, and then an open infection. That is the primary idea in utilizing the specific etiologic factor, as it varies in degree of efficiency in certain instances.

We come to the point Dr. Dimitry has in mind, which is recognized by bacteriologists. We not infrequently, if we use certain proteins which have an analogous relationship to the protein organism which causes the disease, get very good results. In the war zone it has been noticed that vaccines of a heterogenous type are capable of controlling infection; nevertheless, I do not mean to say that the most desirable results in vaccine work in general may not be obtained without going into detail about the question of the realization of the specific serum in that individual. One of the most striking analogies bearing out Dr. Dimitry's remark is the question of acid-fast movement, the matter of tuberculosis, and so on down the line. It has been my experience in experimental work on animals that we have not been able to bring out any specificity in the animal we injected as regards the different types of organisms we used. In other words, the tubercle bacillus serum acts just as good against the tuberculosis organism as the other way.

As regards the question of Dr. Herold, the organism that has been reported by Connellan and King is still under judgment. However, I think a specific vaccine-therapy showing us some results is encouraging, and I hope something will come of it. Let us hope it will be an additional means of eradicating these various serious infections.

THE INFLUENCE OF THE PRESENT WAR ON THE TREATMENT OF INFECTED WOUNDS.*

By K. WINFIELD NEY, M. D., New Orleans, La.

The antiseptic principle in the practice of surgery was first advocated by Lord Lister in the latter half of the past century, and the evolution of this principle has, perhaps, done more to extend the domain of modern surgery than the work of any other man. While truly he was the father of antiseptic surgery, "the original idea of the antiseptic system was the exclusion of all microbes from the wound"—a system which, at the present day, has been developed largely without the use of the Listerian antiseptics, preferring thermal sterilization rather than chemical, the development of which constitutes our system of aseptic surgery.

Under the prophylactic influence of aseptic surgery the severe infections encountered by our forefathers became more rare, until they began to be looked upon more as exceptional cases, in which the fault was due rather to a break in the natural defensive powers of the individual or to a flaw in the aseptic technic. The spirit of medicine to-day being more inclined towards prophylaxis than at any other time, has caused us, in these infected cases, to improve our aseptic technic, preventing infections, rather than to the direction of our efforts to the treatment of existing infection, believing the prevention the more important.

This perfection of the aseptic principle and its success in civil practice had established in the mind of the modern surgeon a confidence in his ability to control infection, which was rudely shaken at the outbreak of the present war by the almost universal presence of severe sepsis occurring in men brought back from the front. These wounds are infected to a degree almost inconceivable and out of all proportion to anything observed in civil practice; in fact, in spite of his confidence, the surgeon was confronted with what has been termed a veritable "orgy of sepsis." The antiseptics, and antiseptic methods which were in common use and which had proved adequate for the

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limited needs of aseptic surgery, and in which so much confidence had been placed, proved futile in the combat of these intensely septic wounds. Surgeons endeavored to procure complete primary sterilization of gunshot wounds by saturating them with pure carbolic acid and alcohol, or tincture of iodine, and would afterwards attempt primary suture; but such endeavors were doomed to failure, and the attempts at suture resulted most disastrously, producing severe systemic disturbances which demanded immediate reopening of the wound. This proved conclusively that the methods then in vogue did not sterilize the wound and that primary sterilization with chemical antiseptics was entirely out of the question. In fact, it was soon learned that such wounds may be treated by primary suture only when they can be completely excised.¹ The primary sterilization of wounds having proved a failure, efforts were then directed to the removal by mechanical means of all devitalized tissue and foreign bodies, such as pieces of cloth, shell and detached pieces of bone, with the establishment of drainage by enlarging the wound when necessary, and by making counter-openings in dependent portions. These mechanical principles were, and remain, of primary importance in the treatment of all wounds of war, independent of whatever after-treatment may be instituted.

CAUSES OF INFECTIONS.

The character of the fighting in Belgium and northern France is responsible to a great extent for the severity of the infections, which are due to several factors:

First, the men live, fight and are wounded in trenches dug in land which is perhaps the most fertile soil in Europe, highly cultivated, and fertilized with the excrements of man and animal for years, the soil abounding with bacteria. The soldier, when wounded, has been fighting in clothes caked with this mud and dirt, and has often been unable to attend to the simplest demands of personal cleanliness for weeks.

Second, the majority of the wounds are produced by pieces of high explosive shells, shrapnel, hand grenades and bombs, which, because of their rough and irregular form, produce the most severe lacerations, and often multiple wounds, carrying in pieces of infected clothing and burying themselves deeply in the tissues.

Third, the conditions under which first-aid attention is received in the trenches are most insanitary. The first-aid dressings are often applied by a comrade in like filthy condition; and, should

the soldier fall in the open, it may be hours, or even days, before the rescue is possible—particularly so in the severer injuries, when a man is unable to help himself.

Fourth, after removal to the field ambulance or clearing station, where the wounds are properly dressed, the wounded man is then sent to the base hospitals, which may mean a journey of from one to several days, during which time it is possible to give his wound little or no attention. So that, upon his arrival at the base, these wounds are usually intensely septic, and by this time his dressings are in reality poultices of pus.

METHODS OF TREATMENT.

Opinion is greatly divided in France and England as to the method most efficacious in the treatment of septic wounds. The chief difference seems to be between the physiological method of Sir Almroth Wright and the antiseptic method. In Germany the inadequacy of the older antiseptic methods has resulted largely in the open method, where wounds are exposed to the air and sunlight, and to hyperemic treatment after Bier's method. Both of these methods are widely used in Germany.

In the determination of the relative value of a given system, it is essential to definitely understand just what is to be hoped for in the employment of that system; and in the treatment of infected wounds we might say that the system most desirable is the one which produces the earliest extermination of infection to an extent which makes complete suture of the wound a permanent and safe procedure. While it may be possible to destroy the bacteria within the cavity of a wound, or those covering its surface, by the use of chemical antiseptics, we may be reasonably certain that no antiseptic can penetrate the tissues to an adequate depth in a solution strong enough to destroy the bacteria without being of sufficient strength to destroy the tissues also; therefore, with the antiseptic principle, the greatest part of the work, which is the sterilization of the tissues, is in reality left practically to the protective agents of our natural resistance.

Wright,² by his hypertonic solution, attempts to accomplish what may be attained by the antiseptic system, and also to influence the factors involved in the normal resistance of the tissues. This he does by the use of a five per cent solution of sodium chloride, with which the wound is constantly irrigated. This hypertonic solution, by osmotic or other action, increases the flow of lymph from the

surfaces of the wound, thereby producing a natural lavage of the tissues, and by so doing maintains an outward flow which opposes the entrance of bacteria. The exhausted lymph, which has spent its germicidal energies, is thus replaced by active, fresh lymph. The continuous irrigation of the wound with the hypertonic salt solution keeps it very moist and greatly facilitates drainage, so that necrosed tissue and bacteria are readily carried away. With this treatment the wound early takes on a healthy, granulating appearance, with practically no pus. The induration surrounding the wound is affected very markedly and disappears rapidly. After this is accomplished, it is necessary to change the character of the solution to an isotonic or normal salt solution, which encourages diapedesis rather than osmosis, and the leucocytes which were retarded by the hypertonic solution appear on the surface of the granulating tissue, producing a thin white film. Their strong phagocytic action, in turn, prevents reinfection of the tissue.

In the use of this method it is imperative that the tissues be kept constantly laved with the solution in use. This is best accomplished by the use of small-sized rubber tubing carried to the depth of the wound, around which gauze is packed, it coming in contact with the walls of every pocket and recess of the wound.

Colonel Gray³ has had very satisfactory results in treating wounds of war by using salt packs and bags in which the sodium chloride is used in tablet or powder form. Their action in stimulating the outflow of lymph from the tissues keeps a solution of the salt in such proportions as to produce results similar to the saline treatment of wounds. The value is evident in the transportation of the wounded where the continuous irrigation of the wound would not be possible. I have seen brought into the base hospitals hundreds of cases which have been treated in this manner, and have found their wounds in a better condition than were those which had undergone other forms of treatment. This seems to be a most desirable method to use during transportation, or when time does not permit the use of the more complicated procedures of continuous irrigation.

Rutherford Morrison⁴ advocated the use of a paste in the treatment of gunshot wounds which is composed of one part bismuth subnitrate, two parts iodoform, with sufficient paraffin to make a thick paste; but such treatment has not the advantages of lymph lavage, and it has a tendency to inhibit drainage, particularly if used in bony cavities. I have found it more satisfactory to use the same proportions of bismuth and iodoform in liquid paraffin, pro-

ducing a mixture about the consistency of cream, with which the gauze is saturated before packing the cavity. This is advantageous in that it lessens the pain in changing dressings and does not interfere with drainage. With this treatment, union by second intention is only possible, as primary suture with primary union is not to be expected.

The antiseptic method at the present time receiving the most attention, and which has been most successful in producing a rapid disappearance of the micro-organisms infecting wounds, is known as the Carrel-Dakin method. Carrel⁵ has worked out the technic of using a solution of sodium hypochlorite, known as Dakin's solution,⁶ but it is this technic, rather than the special antiseptic, that has made this treatment so satisfactory. The value of the hypochlorites as disinfectants has been known for many years, but because of their caustic and irritating action upon the tissues they were not used in surgery until Dakin and Lorrain Smith, each working independently, were able to compound a hypochlorite preparation which was practical for surgical use. Smith's preparations are known as Eupad and Eusol; Eupad being a powder which is composed of equal parts of chloride of lime and boric acid; Eusol being a solution of this powder and containing from five to six-tenths per cent of hypochlorite. This is somewhat stronger than Dakin's solution and slightly more irritating. Dakin's solution is one of sodium hypochlorite, and is perhaps used more extensively than any other hypochlorite solution. However, Daufresne has modified this solution somewhat, making it without boric acid, and this is the solution now being used by Carrel at Compiegne. It is important that these solutions be not stronger than 0.5 per cent, as they are then caustic, and, if much lower, their antiseptic value is impaired. The germicidal properties of the hypochlorites, taking carbolic acid as a standard, may be expressed as carbolic acid 100, hypochlorites 14,000 to 22,000. With this marked antiseptic action, the hypochlorites apparently do not damage the tissues, and large amounts may be used without toxic effects. As is the case with all antiseptics, its bactericidal properties are soon expended; therefore, it is necessary that a constant fresh supply of the antiseptic be kept in contact with the tissues.

These hypochlorite preparations are inexpensive, but rapidly lose their strength and should not be kept longer than one week. They have the double advantage of being powerful antiseptics and at the

same time possessing hypertonic properties capable of producing an outflow of lymph, as does the hypertonic solution of Wright.

While this new field of antiseptics promises much in the treatment of infections, it is more the question of technic that is responsible for their success. The technic of Carrel has proved in his hands, as well as in the hands of those who use it correctly, most efficacious in clearing up the infection of wounds, making them satisfactory for closure by suture or other methods. Fresh wounds in which infection has not become established are usually ready for suture in from four to five days, and wounds in which infection has become established are frequently clean in seven to fourteen days. After suture, these wounds heal by primary intention.

The Carrel technic consists in opening these wounds sufficiently wide to give free access to all parts of the cavity, extreme care being taken to search out and lay open all pockets; all foreign bodies, such as pieces of shell, cloth, loose pieces of bone, are removed, and all devitalized tissues carefully cut away. Hemorrhage is controlled by ligating or twisting the vessels. The wound is then irrigated with the hypochlorite solution, and rubber tubes six millimeters in diameter, covered with bath toweling, are carried to the recesses of the wound. Around these tubes gauze is lightly packed, but it must be so arranged that the solution, which is carried in by the tubes, will come in contact with every part of the wound cavity. If any culs-de-sac are overlooked, the treatment will fail. In compound fractures the tubes are arranged so that the ends lie between the bony fragments. The wound is then covered with non-absorbent cotton, through which the tubes pass. These tubes are connected above to an irrigator, and the solution is run into them every hour or two, thus constantly applying to all parts of the wound a continuous fresh supply of the antiseptic, and at the same time facilitates drainage in the most ideal manner.

BACTERIAL COUNT.

The bacteriological examination of a wound is of primary importance in the determination of the condition and time when the wound may be safely sutured. This examination, apart from determining the nature of the infecting organisms, is directed towards estimating the number of bacteria present, and is known as the bacterial count. This count is made by preparing a smear after the usual method, and examining the same with a one-twelfth oil immersion lens. The number of bacteria are counted in a micro-

scopic field. During the first twelve hours, smears are usually negative; however, cultures are positive. But, after the first twenty-four hours, the number of bacteria increases rapidly, until at the end of the second or third day they are too numerous to be counted. At this time the field is usually loaded with bacteria and polymorphonuclear leucocytes. After the fifth or sixth day with the Carrel treatment, the polymorphonuclears have gradually diminished in number and are replaced by mononuclears, the bacterial count being greatly reduced. These mononuclears are replaced in ten or twelve days by microphages, and their presence in the wound indicates its almost complete sterilization, there usually being but very few bacteria at this stage. After the bacterial count has been reduced to about one bacterium to every five microscopic fields for several consecutive days, the wound may be safely sutured and primary union expected. This bacterial count is one of the most important phases of the Carrel technic, and should be made every two or three days, and records kept of the results. This is usually best accomplished by the use of charts for this purpose. In these smears, after the incubation period of the wound, the first bacteria to appear are usually the micrococci, which are rapidly followed by a very great variety of other micro-organisms; but in wounds well drained these bacteria rapidly become exterminated and usually the only remaining organisms are the micrococci.

While in the Carrel-Dakin technic the principle of lymph lavage is combined with that of a powerful and harmless antiseptic, with excellent drainage, the opening of new fields of antiseptics may produce more efficient means of treatment in this line, as is seen in the introduction of flavin and brilliant green, which are accredited with being non-toxic, non-irritating, and having great potency against all micro-organisms, even in the presence of protein material. Of these two newer antiseptics I make mention, but have had no experience in their use.

In the beginning of the war we believed that the fate of the wound depended upon the first dressing, but it was soon learned that the wounds of the war are infected from the beginning. It was not the place for aseptic surgery, upon which our modern school is founded. Our confidence in our ability to produce primary chemical sterilization of wounds having been so rudely shaken, proved how quickly we had forgotten the teachings of Lister and the problems confronting our fathers before the days of antiseptic surgery; but grim Necessity has again been served, and, where in-

fections seem uncontrollable and unlimited in extent, surgical science has again arisen to meet the needs of humanity.

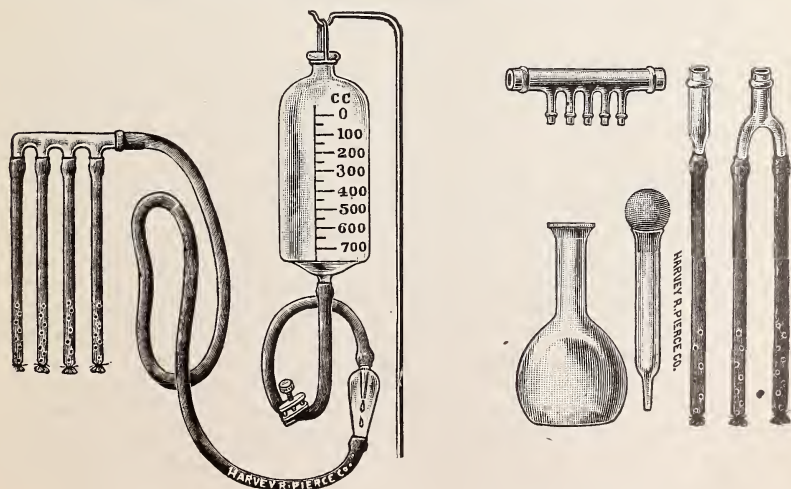
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DISCUSSION ON THE PAPER OF DR. NEY.

Dr. P. B. Salatich, New Orleans: I would like to ask Dr. Ney to explain the technic more in detail as to the way they use this tube. Evidently, if I understood him, they introduce this tube to the depth of the wound, having perforations all around and packing gauze lightly around, and, instead of moistening the gauze, the solution comes up from the bottom and moistens the gauze from below.

Dr. Ney (closing): In answer to Dr. Salatich's question, I have here the apparatus which is used by Carrel at Compiegne for the treatment of these infected wounds. These tubes are carried into the depths of the wound, into all of the pockets and recesses. The bottle is filled with the solution of hypochlorite, and a piece of cotton is placed in the bottom of the bottle, which allows filtration of the solution. These tubes are connected so that one may use one, two or three as required. It is not the question of keeping up a continuous drip, but every hour or two enough of the solution is allowed to run into the bulb to insure a sufficient supply of the antiseptic. We do not use this in the form of a Murphy drip. All cavities are loosely packed with gauze and the fluid is thereby carried to all recesses of the wound. This apparatus was furnished to me by the McDermott Surgical Instrument Company.



UNSUSPECTED CHRONIC APPENDICITIS RECOGNIZED DURING THE ROENTGEN EXAMINATION OF THE GASTRO-INTESTINAL TRACT.*

By AMEDEE GRANGER, M. D., New Orleans, La.

Cases of unsuspected appendicitis are not as uncommon as might be supposed. During the past three years I have discovered unmistakable evidences of chronic appendicitis in ten patients whose gastro-intestinal tract I was examining with the Röntgen rays for supposed abnormalities in the stomach or the duodenum, and in whom the possibility of appendiceal disease was not even thought of. The symptoms in these cases were not constant, but such as to suggest gastric or duodenal disease, and all the cases examined had been diagnosed, and by competent men, as probable gastric or duodenal ulcers, with the exception of two. In those two the diagnosis of gastric neurosis had been made. Not one of these patients complained of pain and tenderness in the right iliac region, and there was nothing in their histories which could have suggested that the appendix was the offending organ. The duration of the illness in these cases had been from a few months to nine years, with irregular intervals in the cases of long duration, during which the symptoms would disappear altogether. All the cases had been under treatment, some for gastric or duodenal ulcer, others for various forms of dyspepsia, still others for neurasthenia or gastric neurosis.

A brief history of one of the cases will, I believe, prove interesting. The case selected was the first of the series furnishing the subject-matter for this paper; it was unusually interesting, and the patient, whom I saw two weeks ago, has remained well during the three years which have elapsed since the appendectomy.

Mrs. R. P.; age 31; married; a native of a European neutral country, but a resident of the United States for about nine years. Referred for examination January 27, 1914, with a probable diagnosis of gastric or duodenal ulcer. At that time she stated that her trouble dated back eighteen months. She had been treated for dyspepsia by her family physician for several months before he referred her to a gastro-enterologist. The latter made a diagnosis of gastric ulcer, and after treating her several weeks decided that the ulcer, if any had existed, was healed, and that she was now suffering from some form of gastric neurosis, and he referred her to a neurologist. After remaining under his treatment for some weeks, and once during that time taking a rest-cure, consisting in rest in bed in a quiet room and on a very restricted diet for a period

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of six weeks, without obtaining any permanent benefit, she consulted the surgeon who referred her for the Röntgen examination, her mind fully made up to be laparotomized if necessary to find out the exact nature of her trouble and of having it removed if possible. She said that during the brief periods of well-being which she had during the eighteen months since the beginning of her illness she could eat anything and it caused her no inconvenience, but that at all other times everything she took, even milk, would produce a distressing sensation, amounting often to actual pain in the epigastrium. The degree of the discomfort or pain did not bear any relation to the quantity or the quality of the food she took. At times the unpleasant symptoms would begin immediately after eating, then, at others, not for two or three hours after. They sometimes lasted for a few minutes, then again during the whole time of digestion. During her entire illness she suffered more or less from constipation.

The fluoroscopic examination of her stomach after the ingestion of the opaque meal showed an abnormal increase in the number and depth of the peristaltic waves, a decided tendency to spasmodic contraction, almost amounting to the hour-glass type in the pyloric portion of the stomach, and a marked pyloro-spasm. There were no painful pressure points, no incisturia, no filling defects; in fact, no evidence of disease or adhesions of the stomach or the duodenal cap. The six-hour plate (Fig. 2) shows no gastric residue; the opaque meal has passed beyond the hepatic flexure. The terminal ileum, cecum, appendix and the ascending colon are filled with it. The appendix is kinked. In the twenty-four-hour plate the appendix and the caput cecum were still filled with the opaque meal and had the same shape and position seen in the six-hour plate. The terminal ileum, ascending and transverse colon were empty. I concluded, from that evidence, that the appendix was the seat of chronic inflammation and that it and the cecum were bound down by adhesions. The patient was operated on during the month of March, 1914, and the Röntgen findings were confirmed.

In answer to those who may suggest that the gastric symptoms may not have been due entirely to the chronic appendicitis and the resulting adhesions, and that the operation may have cured the neurosis, I wish to say that, shortly after being operated, this patient and her husband, who, although living in this country and intending to make this their home, had never become naturalized, went on a visit to their old home in Europe. They were there when the war broke out, and, being still of military age, he was ordered to the colors during the mobilization which was general throughout Europe. He sent his wife to London, with instruction



to await there news from him, as he intended to desert from his regiment, join her and return with her to their home and business in America. He deserted, met his wife in England and they secured passage for this country. For days they feared arrest, realizing fully the consequences of such an eventuality, and it was not until they got off the steamship and had left the pier in New York that they felt safe. When they reached New Orleans three days later both were on the verge of nervous collapse, but her former trouble did not return.

After I had seen three cases I began looking for trouble about the appendix whenever I found spasmodic contractions of the stomach, especially of the pylorus, with no six-hour residue, and no Röntgen evidences of disease of the stomach and the duodenal cap. In such cases I always make a ten- and twenty-four-hour plate, besides the usual number of plates, immediately after the opaque meal and the one six hours later.

If the appendix is not seen in either the six-, ten-, or twenty-four-hour plates I have the patient take two copious enemata and return for another exposure. In several instances retro-cecal appendices, which were not visible in the earlier plates because they were hidden from view by barium-filled cecum, became plainly visible after the colon had been emptied (Fig. 4).

The Röntgen findings on which the diagnosis of chronic appendicitis was made in these cases were:

A fixed appendix shadow, meaning by that an appendix shadow which could not be moved by manipulation during a screen examination, or one found in exactly the same position and location on plates made at several hours' interval; an appendix shadow showing persistent kinks or constrictions; or an appendix shadow still plainly visible hours after the cecum and the ascending colon can no longer be seen.

When the appendix shadow is not freely movable, or when it is kinked or constricted, the appendix will be found adherent, and the seat of chronic inflammatory changes.

An appendix that is not emptied of its opaque meal when the cecum and the ascending colon are, is a non-functioning appendix, one whose walls have lost their elasticity and contractility. This is always the result of infiltration and thickening of its walls by the chronic or recurring inflammatory condition of the appendix.

In conclusion I wish to emphasize two facts:

1. That a patient may be suffering from chronic appendicitis, and yet have no symptoms suggesting trouble with that organ, but present a clinical picture strongly suggestive of ulcer of the pylorus or of the duodenum.
2. That the appendix shadow is sometimes hidden from view by the shadow of the cecum, and can only be visualized by a thorough emptying of the cecum.

DISCUSSION ON THE PAPER OF DR. GRANGER.

Dr. K. W. Ney, New Orleans: From the standpoint of the abdominal surgeon, I would like to say that I believe all cases presenting obscure abdominal lesions, and especially those types of cases presenting what we term the chronic abdomen, should always have an X-ray examination made before attempting a diagnosis or some surgical intervention. For instance, with the X-ray examination, the gastro-intestinal tract is visualized during physiological activity. On the operating table the contents of the abdomen are examined only when physiological function has been suspended during anesthesia, and then it is only possible to detect gross pathological lesions. We are developing into the age of physiological surgery, where diagnosis may only be made by the study of physiological function. For instance, we frequently see cases suggestive of gastric duodenal ulcer which are in reality disturbance of function due to the chronic appendix. An X-ray examination in such cases is indispensable, inasmuch as the stomach and duodenal findings are negative, and it throws light upon the true nature of the trouble.

There is one question I should like to ask Dr. Granger: Does he consider the patulous appendix, or the appendix that permits the entrance of bismuth, to be diseased? I have frequently seen the removal of a very large appendix, with large lumen, with most beneficial results, where the microscopic examination proved afterwards to be normal, in so far as pathologic anatomy was concerned. I consider the beneficial results obtained to be due to the removal of the source from which colonic toxins were being rapidly absorbed, owing to the structure of the appendix, a condition which I have termed appendiceal stasis. The removal of such an appendix is a question of physiological surgery.

Dr. Scott, Alexandria: I would like to ask a question along the line Dr. Ney suggested. The normal appendix is a patulous appendix under ordinary conditions, barring, of course, appendiceal kinks and ileal kinks from inflammatory or pre-existing veils of peritoneal membrane.

From the standpoint of the Röntgenologist, I would like to know if Dr. Granger considers an appendix which is filled completely with bismuth a normal appendix. In inflammatory conditions we know that the appendix is generally filled, and does not empty itself completely.

Dr. Wallace, Alexandria: I did not hear all of Dr. Granger's paper, but it would seem that if the appendix was only partly filled, or half filled, it would be somewhat conclusive of a pre-existing inflammatory condition. That may be of assistance in making a diagnosis with the X-ray.

Dr. Granger (closing): There is a certain percentage of appendices (25 or 30 per cent) that are perfectly normal, and yet are not visualized

during examination. In cases of chronic appendicitis the appendix often becomes occluded by the chronic inflammation, and it cannot fill with the opaque meal. It has been my experience that these cases are invariably associated with either ileal or cecal stasis, or both.

The cases mentioned in the paper were all operated and confirmed, so there is no question as to the diagnosis. In every one of these, the appendix was either kinked or constricted or adherent. If the appendix is visualized, and is neither constricted or adherent, and if it is the same size throughout, I would consider it a normal appendix. I think that any appendix in which the distal end is greater than the proximal end is either the seat of a chronic inflammation or is fraught with great danger to the patient, because it is an appendix that would not empty itself if it became inflamed. It could not drain, and the infectious material would remain in it. If the appendix is kinked, if it is constricted at any point, or the distal end is larger than the proximal, I would recommend the removal of the appendix. My experience has been that the appendix shadow disappears within twelve hours after the bismuth has passed out of the cecum and ascending colon. I consider that we have stasis in the appendix and non-functioning appendix whenever the appendix shadow is seen six or seven hours after the cecum and the ascending colon are emptied.

EMPHYEMA.*

By GEO. S. BEL, M. D., New Orleans, La.

While it is not my intention, in presenting this paper before the Society, on Emphyema, to attempt to bring out anything new in respect to clinical symptoms and physical signs, I have felt it would be of interest to point out the necessity of early recognition in order to avoid the serious consequences necessarily following late diagnosed and undiagnosed cases of pyothorax. Furthermore, to determine the etiological factor in its production, as this has a most important bearing on vaccine-therapy in the after-treatment of the condition. Only recently I have seen twenty-six cases of this condition which should have been diagnosed earlier, and undoubtedly would have avoided much undue suffering, serious pathological changes and delayed recovery. I wish particularly to stress the importance of early diagnosis of pus in the pleural cavity.

Emphyema, or purulent pleurisy, is always caused by some pyogenic micro-organism, starting in the lungs or pleura, except in those instances when the infection has come by way of the

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diaphragm or external traumatism. It is a common complication in pneumonias, more especially the lobar type; or from a ruptured tuberculous or gangrenous focus in the lungs, or more rarely a sub-diaphragmatic abscess in or about the liver or spleen, rupturing through the diaphragm. In all cases of empyema, one or more varieties of micro-organisms are present, and not infrequently some of these are of the putrefying type, which explains the fetid condition of the pus. The presence of putrefactive bacteria is explained by the fact that the lung, from which the empyema arises, normally contains a variety of such germs, so that while the pus is the result of some one underlying pyogenic bacterium it unavoidably becomes contaminated with the ever-present saprophytes. I mention this specially because so often it is thought necessary to prepare an autogenous vaccine for the treatment of the condition, and it is extremely important to discover the real cause of the pus for this purpose, and not some of these contaminators. If the condition is not diagnosed early and relieved surgically, the consequences may be very serious, the patient dying of toxemia, or a septicemia, or even a pyemia. Infected pus, if allowed to remain, not infrequently leads to serious conditions elsewhere, such as infarcts of various internal organs, acute endocarditis, thrombosis of important venous channels. I have seen phlegmasia dolens, commonly known as milk-leg, follow empyema, in which the empyema was unrecognized.

If the pus is not relieved, it often happens that it becomes organized, giving us a fibrous cicatrix, which contracts, and later hardens, as a result of calcareous deposit forming a solid mass in the pleural cavity. In any event, there is great thickening of the pleura and deformity of the chest as a result of the inevitable contraction. It must be remembered, in view of the serious nature of empyema and the readiness with which it may escape early recognition, that the physician will more often regret his delay than the precipitancy in the use of the puncture needle in a doubtful case. There is not the slightest danger to the patient from an exploratory needle puncture; therefore, this procedure I strongly advocate in every case of pneumonia which continues beyond the usual period without any apparent improvement, irrespective of the physical signs. It is of paramount importance to evacuate the pus early and keep the cavity well drained; otherwise, even after complete recovery, the lung, because of its atelectatic condition, will not cause

the visceral and parietal pleuræ to come into opposition, which makes impossible the obliteration of the sac. This leads subsequently, too often, to extensive surgical interference in order to obliterate the cavity (Schede's operation).

I would suggest to the practitioners attending upon patients suffering with pneumonia or other inflammation that may lead to empyema not to be satisfied with the usual report of the nurse and cursory examination of the chart, and trust too much in the patient's natural processes. It is our duty to aid the host in every way possible against the invader, therefore I repeat again, determine as early as possible the presence of pus and its cause. Excellent results, as you know, are being obtained in the treatment of pneumococcal and streptococcal infections, particularly in pneumonia, by antitoxins. The same results should necessarily follow the similar specific treatment of empyema, whose cause is of the same origin. Failures in the past to benefit lobar pneumonia with antitoxin are now known to be due to the fact that the particular exciting strain was not determined prior to the administration of antitoxin. You will recall the excellent results obtained after the method of Cole, of the Rockefeller Institute, in the treatment of pneumonia. This author has found that lobar pneumonia may be due to one of four or five different varieties of pneumococci. The pneumonia due to any one of these is only benefited by the antitoxin prepared from the homologous culture. From this you will see how much might be obtained along the line of serum therapy with empyema, particularly as most of the empyemas are a complication of lobar pneumonia.

Regarding the essential symptoms of empyema, we usually have those common to the preceding condition, which in almost all instances is a pneumonia, irrespective of the cause of the pneumonia, whether it be pneumococcic, streptococcic, influenzal, tubercular or others. It should be borne in mind in this connection that the symptoms of empyema follow those of the original disease without any intermission, or, after the temperature has been normal for several days, it may rise again, and with the return of the fever there are other symptoms pointing to an increase in the thoracic disease. The onset may be accompanied by some cough, but as a rule there is no pain, because the sensory nerve endings have been deadened by the preceding lung condition, and may or may not have dyspnea, depending on the amount of effusion. To the symptoms

which usually are found in serous effusion are added an intermittent (septic) temperature, sweats, chills, pallor, sometimes a localized edema, and in rare instances actual bulging of the interspaces, or even the escape of pus from the pleural cavity through the intercostal space, where it forms a tumor beneath the skin and may cause an intractable fistula through spontaneous rupture. Marked leucocytosis is the rule, the average about 18,000, and few falling below 12,000, differing in this respect from simple serous pleurisy, that in most cases the leucocytosis is, as a rule, moderate, and, as Cabot shows in fifty-two cases, the average count in simple serous pleurisy was 8,820 and only in nine cases did it exceed 12,000.

Physical signs are similar to those observed in sero-fibrinous pleurisy, many depending on the amount of pus in the pleural cavity and other pathological conditions. The characteristic features on inspection are immobility, bulging of the intercostal spaces and displacement of the apex-beat of the heart. Palpation reveals immobility of the affected side and diminished or absence of vocal fremitus. Percussion yields dullness or flatness and a sensation of increased resistance. The upper line of dullness is not horizontal, but is curved, and rises higher posteriorly. In moderate effusion the line of dullness often changes with the position of the patient. Above the effusion, percussion gives a vesiculo-tympanic note known as Tkoda's resonance. In left-sided empyemas Traube's semilunar space is diminished or obliterated.

The respiratory sounds may be weak, distant or absent, but occasionally they have a distinct tubular quality, and bronchial whisper is distinctly heard over the flat area. Bacelli said the whispered sounds were not transmitted through pus, but this is not my experience, as I have frequently demonstrated this to my students, and then immediately drawn out the pus. (This very symptom accounts for many delayed and some undiagnosed cases.)

In conclusion: Two of the most important diagnostic points to be remembered are, first, when the patient with pneumonia continues to have fever and makes no improvement in his general condition after twelve to fifteen days a needle should be inserted; second, when at the period of time above mentioned and the physical signs are those of either effusion or consolidation of lung, calls for exploratory puncture.

For exploratory purposes, the needle should be large, long, and the syringe should have perfect suction from within. Care should

be used not to insert the needle too far, otherwise you will go beyond the pus into the lung. Such examination, performed under proper antiseptic precautions, is absolutely without danger, even though the needle enters the lung. I advise the inexperienced, who is afraid to puncture too deeply, to cause a vacuum in the syringe as soon as the needle has penetrated the skin. In this way pus will enter as soon as it is reached.

By early diagnosis of empyema, all the complications and sequelæ of infected enclosed pus are to be avoided by prompt surgical measures and the institution of autogenous vaccine-therapy.

It is the concensus of opinion, now established by scientific research, that the isolation and preparation therefrom of the offending micro-organism and of a vaccine and its proper administration following the surgical intervention, is of great value in the recovery of empyemic cases.

Aspiration as a means of cure is no longer used; surgical measures and specific treatment are the measures now employed in all cases of empyema of an acute inflammatory nature.

DISCUSSION ON THE PAPER OF DR. BEL.

Dr. Leon J. Menville, Houma: I think the admirable paper presented by Dr. Bel deserves a great deal of discussion, particularly at the hands of the general practitioner, because it is of such great importance. I think he has sounded the keynote. He has urged me on several occasions to use the needle as an exploratory measure in order to make a correct diagnosis of empyema, and I have done so with great advantage.

As to the vaccine treatment that he mentioned, I think it is being developed successfully, but as yet I have not used it. I contemplate doing so when it reaches a greater degree of perfection.

I recall very vividly to mind the case of a child who had lobar pneumonia. The patient had a continuous temperature following the disease for fifteen to sixteen days. The doctor in attendance, a very competent man, said the child had an unresolved pneumonia. Breathing was still a little rapid; all the physical signs apparently of pneumonia were present; there was consolidation, dullness on percussion, bronchial breathing, and the leukocyte count was around 18,000. After hearing and remembering what Dr. Bel had said regarding the great importance of using the needle, I suggested to the family doctor to use the needle in that case, and we found a cavity full of pus. I merely mention the fact because I realize the importance of using the needle and not waiting too long before using it, because a lot of time is saved.

Dr. A. B. Nelson, Shreveport: I would like to recite briefly a case I had the privilege of seeing for the benefit of the gentlemen present. A boy, about fourteen years of age, was brought to Shreveport by his uncle. The uncle told me, before bringing the boy to Shreveport, that he had tuberculosis, and that he had pneumonia two years prior to this date, and that since that time he had had tuberculosis. He told me he

was spitting up a foul-smelling yellow pus, or something of that kind. After he brought the boy to Shreveport I said to the uncle: "I do not think this boy has tuberculosis. However," I said, "we will have the sputum examined." We examined the sputum and found no tubercle bacilli. We found no evidence of tuberculosis in his chest. The history was that he had had a pneumonia and a continuous fever, presenting a typical history of empyema, and on puncture we found pus. We not only resorted to puncture, but we took an X-ray picture, because I wanted to see whether the X-ray picture would show pus in the side. I drained this boy's chest under local anesthesia, as he was so near death that I could not give him a general anesthetic, believing, if I did so, he would have died on the table. I resorted to local anesthesia, resected a rib, and the boy got much better. The boy was spitting this stuff out of his side, which had been there for a considerable time. The bronchial tubes on that side were undoubtedly involved. He would hang his head over the edge of the bed and the stuff would pour out freely. It was extremely offensive. This boy is not well yet. He will not let me do a radical operation on him. I am still treating him. However, he is getting much better, because I did a slight operation on him not long since.

The point brought out by the doctor, of using a large needle, is well taken. If you use a large needle you will not get small particles of fibrin to clog up the needle, and so there is very little danger. You may make it more pleasant for the patient to use one-half of one per cent novocain, and if you do this there will be no pain connected with the procedure.

Dr. T. S. Jones, Baton Rouge: I would like to mention a case I saw a few days ago which emphasizes the point Dr. Bel brought out in regard to hard-breathing sounds. This patient was brought to us from the country by a man whose ability I consider unusual. I was very much surprised to know that the case had gone along for such a long period as it had, and that he did not discover sooner there was pus in the pleural cavity. That was the reason why he had put off sending the patient to a sanitarium, because he elicited breath sounds so plainly through the pus cavity. He called me over the telephone and told me about the case. When the child was sent to the hospital, in using the stethoscope on the child's breast I misunderstood him and got the wrong side of the child to examine. However, I was able to get the breath sounds through the pus cavity. I am sure this child was lost because of the confusion which this condition caused, and Dr. Bel, speaking of it, prompted me to recite the case to you. The pleural cavity was drained, but the child was too septic to recover.

Dr. J. A. Tucker, Baton Rouge: Dr. Bel has certainly read a fine paper, and the condition he spoke of is very common. We have all seen and drained a good many cavities.

I want to disagree with those who spoke about the harmlessness of using the needle. I have seen one fatal case from exploratory puncture, and I have seen another case that went into extreme shock following a puncture. Both of these cases were handled lightly, and the needle did not touch any vital spot. I think, though, it is due to a psychic condition more than anything else. If you puncture with a needle in a careless way I am afraid you will get into trouble. So, I would disagree with those who believe in using a large needle and in saying that there is no danger in connection with its use. I believe there is. One patient died and the other was profoundly shocked.

Dr. Thomas E. Wright, Monroe: I believe that most of what we can

say would be in the nature of aproval of this paper. There are many features in connection with it that especially appeal to us. The subject of empyema has been stressed and stressed from time to time before audiences of medical men. I think, if we analyze a certain feature of the paper, we would find it stressed largely by men who are associated more or less directly with hospitals. Therefore, I think we may conclude they have a definite reason in stressing the subject of empyema for the benefit of the rank and file of the doctors over the country.

Any time we visit a general hospital we see one case after another of empyema brought to the hospital, and we are surprised how often they come from towns of considerable size and are referred by doctors who did not make a diagnosis. I believe that, in a way, accounts for the fact why Dr. Bel writes again and again impressing upon us the importance of early recognition and proper recognition of empyema. Many men, and good men, often fail to get a proper perspective in this or that particular case. We often fail to insist on a painstaking and careful examination of the chest in these acute pulmonary disturbances, and, oftener than we acknowledge, we allow important features of the case to slip through our fingers and finally refer the case to some one else for a diagnosis, when the average doctor should have made it himself. I emphasize this particular point because it is incumbent upon us to hold in mind every case of pneumonia, in every case of grippe, the possibility of empyema.

Another point Dr. Bel has made appeals to us. The symptoms do not have to abate and the patient improve, later the temperature rising, and other associated symptoms arise, for empyema to be present. As Dr. Bel so well describes, the symptoms may persist continuously, and the average doctor may look upon the case as one of unresolved pneumonia. I take pleasure in discussing these points, and especially commend the paper. Those of us who do general practice should take this particular subject to heart.

Dr. J. T. Abshire, LeRoy: I am practicing in the country, where I have to rely entirely on my own hook to manage my cases; I cannot refer them to New Orleans practitioners.

In the last twenty years I have been using a large needle for exploratory purposes in all delayed cases of pneumonia which looked to me as being unresolved, and I have never yet had a bad result, and many a time I have discovered a pus cavity and have saved the patient's life. I want to recite one instance in the practice of one of my confreres. The patient was a big, robust man, who had a bad case of lobar pneumonia. I was called in consultation about the eleventh day, and the doctor told me that it was a case of unresolved pneumonia. Both lungs were involved. I examined the case in accordance with the method advised by Dr. Bel, and I could hear the breath sounds with the stethoscope. I asked my confrere if he had used a needle, and he replied he had not, saying it was too early for pus formation. I used a large needle. I stuck the needle into the side of that patient and got the most foul-smelling pus I ever got in my life. It nauseated me. The next day we operated on him, but the poor man died. He did not die from the use of the needle, but died, in my judgment, because the needle was not used quick enough. If the needle had been used two days before, I believe the result might have been different.

I want to emphasize the necessity of using a large needle in every case of delayed pneumonia, or what we call unresolved lung. I have always had satisfaction from its use and have never had a bad result.

Dr. L. R. DeBuys, New Orleans: I think the paper presented by Dr. Bel is very timely, if for no other reason than stressing the one point of getting bronchial breathing through flatness. We should bear in mind, in making an examination of patients, more particularly in children, that the examination should be made by comparison. Each child, and the adult as well, when the thorax is examined, will give an individual note, so that in making our physical examinations of the thorax we should compare a point on one side with the corresponding point on the other. In that way we will frequently detect the early pneumonias or the lung conditions which precede empyema, or, rather, before they are complicated with empyema. Pleural collections in childhood before the third year are usually purulent. All cases, in my practice, of prolonged pneumonia are aspirated, and I think every patient is entitled to it. Every child showing flatness has a thoracic puncture due.

I think the doctor has brought out another very good point, namely, the size of the needle, and the necessity of creating suction just after the needle has been introduced under the skin, so that when it is pushed forward, if it comes in contact with any pus, the pus will be found. If we proceed in this way many cases of unresolved pneumonia will be shown to be cases of empyema.

Dr. J. Wallace Durel, New Orleans: A remark that was made by Dr. Bel last year on this subject has been very valuable to me. In the Charity Hospital we have had during the year seven cases of empyema that have been posted to be transferred to our tuberculous ward. Every time I have told the intern, "Remember what Dr. Bel said." I remember one case very well, in which an intern had resorted to puncture, and, not finding pus, sent the patient back, saying it was a case of tuberculosis which ought to be transferred to the T. B. ward. There were no bacilli in the sputum, and the patient could not be admitted to the advanced T. B. ward. I said to Mr. Intern, "Remember what Dr. Bel said." The house surgeon, that day, was able to find pus and make a diagnosis of empyema. The patient was operated on. We all agree as to operation in cases of empyema.

We have had a series of interlobular empyema, and sometimes I have been up in the air in knowing exactly what to do for these cases, and I wish Dr. Bel, or some one else, would give us some information about them, especially of the condition between the upper and lower lobes.

Dr. Bel (closing): In the first place, I wish to thank the members individually and collectively for the very free and scientific discussions, and I highly appreciate it, more than words can possibly express.

With regard to the case cited by Dr. Nelson, in which the empyema lasted so long, if he could have had a bacteriologist isolate the specific micro-organism, which was the etiologic factor in the production of this condition, and had had a vaccine made, probably his patient would have been greatly benefited.

The recital of Dr. Jones' case emphasizes the necessity of the introduction of the needle in all cases of so-called unresolved pneumonia. We have an individual who has symptoms of consolidation of the lung, and when the patient is not improving in a limited time I would not hesitate to advocate the method employed by Dr. Jones. It is unfortunate that his case should have reached him so late in a state of empyema.

As to the two cases related by Dr. Abshire and the danger of the use of the needle, he pointed out that one of them fainted and the other died. I do not believe the needle had anything to do with it. The needle, when introduced with the necessary precautions by all experienced

practitioners, would never produce any such condition unless the patient was so devitalized at the time the needle was introduced. If the physiological resisting power is below par, the heart pushed one way, the liver another way, and the patient having all the evidences of a profound toxemia, if you introduce the needle in such a case the patient is likely to faint or be shocked, but may not die. The other patient in whom the needle was introduced was undoubtedly so far advanced that he would have died anyway, even if puncture had not been resorted to. Some people would be shocked from the introduction of a needle, whether they had pneumonia or ingrowing toenail. Even if you show them a needle they get cold and clammy. That is not the fault of the needle. The same thing applies to empyema in neurotic individuals.

I appreciate very much the able discussion of Dr. Wright, and the manner in which he appreciated the presentation of the subject.

Dr. Abshire explained the condition perfectly, and I heartily concur with him in his remarks. I thank him for the able manner and simple way in which he has impressed us all. The doctor manifests a loyalty to his colleagues which is unusual and highly commendable. I wish we could all be infected with the same micro-organisms. (Laughter.)

The remarks of Dr. DeBuys emanate from a man of vast experience in treating a large number of children with empyema. I look upon Dr. DeBuys as an authority on the subject and a man with a vast amount of experience in handling these individual cases.

Dr. Durel asked about cases of interlobular empyema, which I left out in my paper, but which is a very hard point in diagnosis. Interlobular empyema occurring in an interlobular patient with the physical signs of dullness, is a sort of encapsulation of the tissue there, has been very hard to even reach, although the X-ray has been used with good results in localizing the shadow where it could be found. There are many cases on record where physicians and surgeons have decided that this or that case was one of interlobular empyema, and only after resecting a rib were they able to find pus. That is a good point brought out by Dr. Durel. In one case it is well to look wise and watch closely for any dullness in the interlobular fissure. I would carefully watch the first type of empyema the doctor mentioned, with X-ray examination, depending upon localization, with a good surgeon. It takes an experienced man to go in there with a needle and remove a small quantity of pus. Sometimes the quantity of pus may be large. There are a number of cases on record where the patient has been given a general anesthetic or a local one, ribs resected, and even then it has been difficult to get pus.

Before concluding my remarks I wish to say that I eliminated from my paper Grocco's triangle, the Winternitz sign, and other things. Grocco's triangle in serous and pleural effusions you can beautifully map out after you know there is fluid in the chest. It is the rarest thing to find Grocco's triangle before one knows he has pleurisy with effusion to deal with. Purulent pleurisy does not shift so quickly. We must consider the pathologic condition. The two most important points to remember in connection with the finding of pus are in cases of pneumonia in which the individual has passed the limit of crisis, which is usually about the twelfth day. After the twelfth day, if the patient is not getting well, you introduce a needle in there. In the second place, the physical signs are those of fluid or consolidation, or bronchial breathing and focal sounds coming through. In such a case, introduce the needle where Dr. Abshire told you and you may be able to elicit a flat note.

SPINA BIFIDA, WITH REPORT OF CASES. *

By E. D. FENNER, M. D., New Orleans.

Spina bifida is an interesting congenital deformity. As seen in the young babe, there are to-day but two recognized methods of dealing with it: to let it alone, or simply protect it from injury, or to operate by excision of the tumor. Although a considerable number of cases have been operated upon and reported in the last ten years, the fact that Jas. E. Moore, in 1905, was able to collect from the Index Catalogue of the Surgeon General's Library at Washington only 385 cases of spina bifida treated by excision, is sufficient proof that we cannot base our conclusions as to the best method of dealing with these cases upon the experience of any individual surgeon. Many surgeons to-day can count their appendectomies, their goitre operations, their gall-bladder cases by the hundreds, but few indeed can report their operations on spina bifida in larger figures than tens. In searching the records of the Charity Hospital in New Orleans I found that from 1892 until 1906 no case of spina bifida had been operated upon until I successfully excised the tumor in the second of my series of cases in the latter year. The reasons for this hiatus I do not know, but it seems probable that such cases as were admitted to the wards were either unsuited for operation or else the consent of the parents could not be obtained.

Spina bifida is not a very rare condition. Next to talipes it is said to be the most frequent of congenital deformities. But if it is numerically second, it is a very bad second. It has been abundantly discussed, and every text-book contains a classification of its varieties. Nevertheless, I expect there are few of us who would not be obliged to turn to one of these texts to refresh his memory upon the classification of this conditions. It seems to me, therefore, permissible to quote from Ballentyne's work on Ante-natal Pathology the various forms of spina bifida. He classifies them as follows:

1. Total Spina Bifida.—The whole canal is open, the cord is exposed, and there is no sac.

2. Partial Spina Bifida.—A. Spina bifida without spinal hernia. The canal is widely open at one or more places, the cord is exposed, and there is no sac. B. Spina Bifida Occulta.—There is no tumor; the cord is not exposed, but there is a defect in the vertebral arches, and the site of the deformity is marked either by a mass of cicatrix or by the presence of

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an abundant growth of hair. In a very few cases the integuments over a spina bifida occulta are apparently normal, and the condition is not suspected until later life. Associated deformities, paralysis of the limbs, incontinence of urine or feces, and the development of trophic disturbances in the extremities are frequent in the subjects of spina bifida occulta. C.—Spina bifida, with spinal hernia (common variety). 1. Meningocele. 2. Meningo myelocele (common variety). 3. Myelocele.

Total and partial spina bifida, without spinal hernia, are mere pathological curiosities. An open canal with exposed cord is incompatible with life, and such cases are merely museum specimens. Spina bifida occulta is comparatively rare, but the individual may live for years, in some instances with the condition unrecognized, and no treatment is ordinarily indicated, unless it be some operation for the correction of a club-foot or the like.

Partial spina bifida, with spinal hernia, is the condition we are called upon to treat in the vast majority of cases. Here we have a tumor located over the spine. In over 80 per cent of the cases it is located in the lumbar or lumbo-sacral region; in perhaps 10 per cent, in the cervical; in 1 to 2 per cent, in the dorsal region. Except for a few very rare cases the tumor presents itself posteriorly, but it must be recognized that spina bifida does occur through a defect in the vertebral bodies, and may be anterior.

Meningocele makes up less than 10 per cent of the cases. It is more common in the cervical region, and the tumor contains only cerebro-spinal fluid, covered by the membranes and skin. Myelocele is exceedingly rare, and is due to a dilatation of the central canal of the cord, so that the tumor consists of the integuments, the spinal membranes, the dilated cord, within which is the accumulated cerebro-spinal fluid. Meningo-myelocele is the variety found in between 70 and 80 per cent of the cases, and in an equal percentage it is located in the lumbar or lumbo-sacral region. In these the tumor contains cerebro-spinal fluid, but, in addition, the filaments of the cauda equina are spread out and adherent to the wall of the sac. This is the only variety I have encountered at operation.

When we attempt to explain the causation of spina bifida we find ourselves at sea. It is well known that the skin and the spinal cord are derived from the epiblast, while the vertebral bodies and the laminae arise from the mesoblast. The skin and the cord are formed first, in the second month of foetal life, and they are adherent to each other until the mesoblastic lamina insinuate themselves between them to complete the bony spinal canal during the

third month. Two theories have been advanced to explain the occurrence of spina bifida. The more widely accepted view, endorsed by the Committee on Spina Bifida of the London Clinical Society in 1885, ascribes it to a primary defect of development of the mesoblast, so that the spinal arches are not completed. The other, which is ably defended by Norman Sharpe, of New York, contends that the defect in the vertebral arches is due to pressure exerted by an excessive secretion of cerebro-spinal fluid. He instances the fact that the laminae meet first in the dorsal region, next in the cervical, and last in the lumbar and lumbo-sacral regions. This does not occur until the third month. The cerebro-spinal fluid is secreted by the choroid plexuses of the lateral ventricles, and these are formed during the second month, before the laminae have united in the median line. *Ergo*, an excessive pressure by the cerebro-spinal fluid would interfere with the closure of the laminae, and this would be more likely at the point where the closure is latest, namely, the lumbar region, in which 86 per cent of spinal bifidas are met. Other, but less tenable theories have been advanced, but they are hardly worth discussing, and, having no special knowledge upon the subject, I shall not attempt to decide between the two theories here presented.

In the vast majority of cases the diagnosis of spina bifida is simple enough. The tumor is congenital; it is fluctuating; it occupies the median line, and is in the lumbar or lumbo-sacral region; it is often translucent; it becomes tense on crying or coughing; it may be compressed, with a resultant bulging of the anterior fontanelle, and the defect in the bony arches can be felt. In the rarer forms, however, the diagnosis may not be so easy. Very small spina bifidas are sometimes overlain by lipoma, and an operation for a simple lipoma may prove disastrous, owing to an unsuspected spina bifida. Sacro-coccygeal cysts or dermoid tumors may give rise to uncertainty, but, as a rule, the location and the absence of increased tension on crying will serve to differentiate. As to the differential diagnosis between meningocele, meningo-myelocele and myelocele, we must bear in mind that meningo-myelocele is the variety in almost 86 per cent of the cases; that it is generally sessile, with a broad base; that it is much less apt to be covered by healthy skin than meningocele, and that myelocele is so rare that it may be practically disregarded, especially as its treatment is identical with meningo-myelocele.

The prognosis of spina bifida is gloomy. Excluding the total and partial forms, with open canal, which cannot survive after birth, the clinical types of spina bifida for which treatment is possible show a very high mortality. Moore found that the mortality of the cases operated upon in the early months of life was about 35 per cent, while in those cases in which surgical intervention was postponed until they were four or five years old the mortality sank to about 5 per cent. It is obvious, however, that these figures are fallacious, since only very favorable cases of spina bifida could be expected to survive till five years old, unless subjected to operation. In England, in 1882, there were 649 cases of spina bifida which died, and, of these, 612 died in the first year. The vast majority were surely not subjected to operation, and it is very easy to deduce the conclusion that few cases of the ordinary type could be expected to live long enough to submit to operation in the fifth year of life. The reasons for this excessive mortality in the first year are very plain. Most of the cases are meningo-myeloceles, located in the lumbar region, and are rarely covered throughout by healthy skin. Towards the apex of the tumor the sac is very thin, translucent, composed of a fusion of the epidermis and the membranes, and soon shows ulceration, which terminates in rupture of the sac and the death of the patient. In cases such as this it would seem that any percentage of permanent cures would be just so many lives saved, since, to leave them alone, is to condemn them to certain and early death.

It is interesting to note the conclusions of prominent surgeons as to what conditions justify operative intervention: Bayer, after a rather disastrous experience, would advise operation: (1) Where there was no decided hydrocephalus; (2) where there was no paralysis; (3) where, clinically, there were no complications to be expected in the sac. Hildebrand concludes that "most myeloceles and meningo-myeloceles, and cases complicated by irreparable deformities and severe paralysis should not be operated upon." After reporting several cases, Broca advises against operation. Mayo Robson, in 1895, advised operation in all cases except where the tumor was so small that operation was obviously not necessary, and where there is a large fissure-marked hydrocephalus or paralysis. Moore gives his own conclusion, from his analysis of 385 cases, as follows: "A careful study of the reported cases illustrating the experience of so many surgeons seems to justify the following con-

clusions: 1. Operation upon children of very tender age is scarcely worth while, because it is attended by so large a mortality, and because it does not stop the progress of progressing cases. 2. Patients five or more years old can be operated upon with safety. 3. Patients with large or rapidly growing tumors, with hydrocephalus or paralysis, or deformities of the lower extremities, are not cured. 4. Finally, all we can hope to accomplish by operation for spina bifida is to relieve the patient of an unsightly and annoying tumor, after he has survived the affliction *per se*."

William Sharpe (*Annals of Surgery*, 1915) believes "that the only contra-indications to operation are a bony defect so large that it could not possibly be repaired, and a condition of absolute paraplegia and loss of sphincteric control. Age is of no importance, since many cases of recovery have been reported in very young infants following operation."

Careful reading of the papers of Moore, Lovett, Sharpe and others, together with my own experience in the operative treatment of some twelve cases, has led me to take a view somewhat at variance with the distinguished writers whom I have quoted. Admitting that the mortality of cases operated upon in the first months of life is as high as 35 per cent, I do not believe that this is sufficient reason for abandoning the case with a very thin sac wall, which will slough or rupture, to certain death, provided the case is otherwise suited to excision. When there is marked hydrocephalus already developed I believe that operation is hopeless. Even in cases with paraplegia, or club-foot, it seems to me that, in the absence of hydrocephalus, the parents should be given the choice. Would any man dare to suggest that a child stricken by poliomyelitis, with complete paraplegia, should be abandoned to die because it would remain a hopeless cripple? The rare cases in which the tumor is covered by strong, healthy integument should have the operation delayed, I believe, if the tumor is small, or, indeed, under any circumstances, because delay does not threaten the child with death, but gives us a chance to determine whether or not hydrocephalus will develop, and also whether the infant's vitality is going to be great enough to survive the "secondary mortality," which is estimated at 25 per cent even in cases which have escaped the dangers of the first three or four weeks after an excision has been successfully done. In the vast majority of cases, the attenuated sac wall and the presence of ulceration, which indicates certain rupture of

the sac, leave us no other choice than either operation in the first two months or abandonment of the child to its fate. In this connection I have never been able to close my eyes to the moral obligation which demands that life should be prolonged wherever possible. I cannot bring myself to believe that the doctor has a right to constitute himself a court of last resort to determine the question of whether or not a cripple has a right to be allowed to live.

The treatment of spina bifida divides itself into three divisions:

1. Simple protection of the tumor to prevent rupture, ulceration and infection and traumatism. This is indicated to carry the child over to a favorable time, to prolong life in those cases in which operation is admittedly hopeless, and in cases with firm, healthy skin over the tumor, in which there is reasonable hope for safely waiting until the fourth or fifth year before operating.

2. Injection of the sac with some irritant fluid of which the type is Morton's fluid. In pre-antiseptic days this was the only feasible method of attempting a cure. It could not be of use in any but meningoceles, and in them only where the neck of the sac was very small. To-day it may be accepted as beyond cavil that any case suited to injection would be more wisely subjected to excision.

3. Excision of the sac. This is the modern method, and the only one deserving consideration. Fundamentally, the operation is extremely simple. An elliptical incision is made through the skin around the base of the tumor, the membranes are left intact as long as possible, are freed from the skin by blunt dissection, but must be opened at some stage. In the great majority of cases the strands of the cauda equina are found spread out over the interior of the sac and adherent to it. These are freed, replaced in the canal, and the membranes closed by purse-string or continuous suture of chromic catgut or fine silk, so as to shut off the spinal canal. Up to this point there can be no difference in the technic. But there is a considerable variation in the recommendations in regard to the rest of the operation. Some have advised osteoplastic flaps taken from the nearby ilium, or transplants of thin bone from the tibia; others advise that a fascio-muscular flap be drawn from either side of the cleft; more recently a transplant of fascia lata has been advocated. My own conviction is that the tender age of the majority of the patients contra-indicates any complication of the operative procedure. Suture of the dura and good closure of the skin is really sufficient, but in

favorable cases I think it is advisable to attempt to suture the lumbar muscles over the gap in the bone. I believe that few of these little ones will bear the tedious process of osteoplastic flaps taken from the neighboring pelvic or sacral region. Equally unnecessary appears to me the procedure reported by Hugh H. Trout (*Surgery, Gyn., Obst.*, May, 1915), where he removed a thin slice of bone from the tibia and anchored it over the small gap in the vertebral arches.

In reading over the literature on spina bifida one is struck by the elaborate precautions advised by some writers to avert the supposed ill-effects of sudden escape of the cerebro-spinal fluid upon opening the sac. I recall a photograph showing an infant prone upon a sort of modification of the Trendelenburg frame, with the pelvis elevated high above the head. In my own experience in cases, the oldest of whom was two months, no shock nor alarming symptoms of any kind ensued upon even sudden, wide-opening of the sac, with prompt escape of all the contained cerebro-spinal fluid. In several cases, however, disturbance of the respiration and heart gave us uneasiness when the sac was subjected to traction in the course of dissection and in the freeing and cutting loose of the strands of the cauda equina.

It has been noteworthy that nearly all my cases went from the table in excellent condition, showing little prostration from the operation. Within the first twenty-four hours in most cases, however, high temperature, great restlessness and nervous excitement have shown themselves. In some, this disturbance subsided in one or two days; in others, fever continued for three or four, or even five days. Provided the child—and most of them have done so, nourished well—I have not permitted myself to be greatly alarmed by the presence of some fever. In a considerable number of cases, after four or five days, leakage of fluid from the sac develops. This is very alarming and may portend a fatal issue, but in at least three of my cases this leakage, after persisting for days, has finally been stopped and the child recovered entirely from the operation.

The proximity of the field of operation to the rectum and the constant danger of contamination of the wound by urine or feces demand the most sedulous care to avert such a disaster. Once permit the wound to become infected and the chances of a secondary meningitis are multiplied.

Reference has already been made to the large “secondary mortality” within two months of the operation and after the wound is

entirely healed. These deaths are due, generally, to intestinal disturbances, and must, it seems, be considered as a part of the operative risk. Certain fatalities, as in one of my cases, occurring seven months after operation, from acute pneumonia, should not, it seems to me, be charged to the operation for spina bifida, but should be regarded as a part of the ordinary infantile mortality.

The records of my experience with this congenital defect in development are given in the following brief histories:

Case 1. The child was ten days old when I first saw it in 1905. It was a male child, well nourished, and with no deformity of the feet or evidence of hydrocephalus. In the sacro-lumbar region there was a tumor about the size of a small orange, translucent, marked by the central cicatrix which we expect in meningo-myelocoele, and with a sac so thin that it looked as if the slightest carelessness in handling it would result in rupture. I advised that we wait as long as possible before trying to operate, but by the time the child was three weeks old ulceration had commenced and the parents brought the child to the city for me to operate.

Under chloroform anesthesia and with the assistance of Dr. J. D. Bloom I made an elliptical incision around the base of the tumor and tried to dissect away the skin before opening the sac, but so delicate were the tissues and so close was the fusion of skin and membranes that in a very short time the sac was penetrated by the knife and the spinal fluid escaped. Finding it impossible to restrain the fluid, I slit up the sac without further delay. Very little shock was caused by the escape of the fluid. The cauda equina was adherent to the sac wall, and had to be dissected free, a number of nerve fibres being sacrificed in the process. The opening into the canal was quite large, involving at least three of the arches, and the skin and membranes were so densely adherent together that I simply sutured the edges of the cleft together with three rows of catgut sutures, after replacing the cauda equina in the canal.

The baby went back to bed in excellent condition, but in a few hours it had a rise of temperature to 103° F., and became very nervous. By next morning, however, it was in good condition, temperature down, nourishing well from the breast, and having no trouble except frequent desire to move the bowels. On the fourth or fifth day I was distressed to find that the wound, which had up to this time done nicely, showed some irritation, and on the following day there was leakage of cerebro-spinal fluid. I feared that this was the beginning of the end, but by touching the spot with lunar caustic and using every precaution to prevent infection I was fortunate enough to see the leak stop and the wound heal nicely.

During this time I thought I detected a tendency to bulging of the fontanelle, but I could not be sure of it, and certainly the baby seemed to be in excellent condition. About three weeks after the operation the child was sent home with the wound healed, except for a small superficial ulceration at one point of the line of incision. Within a few days this was entirely healed. All along, however, the baby had shown a tendency to disturbance of the bowels. The stools were too frequent, and greenish

in color, containing mucus. About three weeks after it had reached home it developed a severe attack of entero-colitis, with high fever, and this was complicated with urinary suppression, which soon ended in death.

Case 2. Jerome B., age two months, was admitted to my service at the Charity Hospital on February 22, 1906. It is the first child, and the parents are both in good health. The baby is small, but is breast-fed, and seems well nourished. There is no sign of paralysis or hydrocephalus. The child shows no cerebral irritation. The bowels and bladder are regular in their action. The infant sleeps quietly, and is not particularly fretful when awake. There is a large, translucent tumor in the lumbo-sacral region, with the usual cicatrix in the centre. The sac is very thin and has an ulceration beginning on it, and looks as if it might rupture at any moment. Pressure reduces the size of the tumor and makes the fontanelle bulge. Diagnosis: Lumbo-sacral meningo-myelocele. On February 28, 1906, under chloroform anesthesia, a part of the fluid was withdrawn by aspiration and an elliptical incision was made around the base of the tumor, going through the skin only. This was then dissected away from the sac proper with care. Not much difficulty was experienced in doing this, but before it was completed the sac had been opened and the rest of the fluid escaped. There was no shock, the pulse remaining excellent. The cauda equina was attached to the wall of the sac and had to be dissected free. The opening into the spinal canal was small, not much larger than the end of the little finger. I replaced the cauda in the canal, but was obliged to use a plug of gauze on the end of a pair of artery forceps to retain it in the canal. On this account I treated the sac as I would the sac of a hernia, simply transfixing it and ligating it with a stout chromicized catgut ligature. The muscles and fascia were brought together across the opening into the spinal canal, and the skin was sutured with a sub-cuticular suture of fine catgut. Over all a collodion dressing was applied, and the baby was sent back to the ward. There was no shock. The child appeared to be in as good condition as before the operation. The subsequent history was uneventful. There was no fever, no restlessness, no disturbance of the bowels.

On March 7 we found some irritation of the skin suture line, due to soiling with the urine, which we had been unable to entirely prevent, but this quickly subsided, and on March 18 the child was discharged.

In the beginning of May the child was presented before the meeting of the Louisiana State Medical Society. It appeared in perfect health, fat, rosy, and with no symptom of disturbance of the brain or cord functions. On August 16, 1906, I saw the patient again. It is a splendid specimen of healthy infancy; weighs $19\frac{7}{8}$ pounds. It is now seven and one-half months old.

Later history: Seen when six years old. Robust, but with incontinence of urine and feces.

Case 3. Ethel B. was brought to my office on July 1, 1906, when six days old. The child presents an occipital tumor (meningocele). The tumor has been partly reduced, but it has been tense, and "twice its present size." The skin seems pretty strong and does not seem likely to rupture. I advised that it be kept powdered with an antiseptic powder, protected by a pad, and that we wait for a time before operating. The parents and the physician in charge were very anxious to have the operation done as soon as possible.

July 24. Child was brought over by the physician in charge. Operation was decided upon, and done to-day. The tumor is about the size of a hen's egg. Chloroform anesthesia. In the beginning the child exhibited an alarming cyanosis, due in part to the position partially on the face and partly to traction on the tumor. This, however, passed off, and the operation was continued without further unpleasant incident. An elliptical incision was made around the base, the skin dissected from the sac, and the pedicle, which was small, being freed, the neck of the sac was ligated with a stout catgut ligature. The sac was cut away and the skin brought together with catgut. Recovery from the operation was uneventful. The baby took the breast readily, slept nicely, had no fever or other complications.

August 1. Baby discharged to-day. Has done splendidly. Weight on admission, $10\frac{1}{4}$ pounds; weight to-day, $10\frac{1}{4}$ pounds. It appears to me that there is some evidence of slight hydrocephalus.

August 13. Baby brought over to-day. Weighs 12 pounds 6 ounces. Looks splendidly, except that head appears to me too large. Circumference of skull, 17 inches. Mother insists that the head is no bigger than it was, but I am not entirely satisfied. The cranial sutures are very widely separated; veins of scalp are large and conspicuous. I order daily inunctions of mercurial ointment, mitigated one-half with vaselin.

May 31, 1907. Perfectly well. No protrusion of sac. Head circumference, $19\frac{3}{4}$ inches. Intelligent. Weight, 18 pounds. Later: Perfect control of bowels and bladder.

Case 4. This baby was delivered by a midwife. In the course of delivery a very large, thin-walled meningo-myelocoele in the sacro-lumbar region was ruptured, a large hole being torn in it. A physician, who was summoned, promptly had the little thing bundled up and brought to the Charity Hospital, where it was seen by me as soon as it arrived. I had it conveyed to the operating room at once, and prepared to excise and suture the sac. The child had a club-foot, equino-varus. There seemed to be no shock as a result of the rupture of the sac. Operation was done under chloroform about six hours after its birth. The sac was trimmed off and sutured with catgut. There was no shock. Patient went to the ward in excellent condition. I predicted the development of hydrocephalus, in which I was not disappointed. The wound did well except for some superficial supuration due to contamination by discharges from bowel before and after operation. However, it was about ten days before death occurred, with symptoms of advancing intra-cerebral pressure. This was a case unsuited for operation, except under the circumstances in which it was done. The sac was torn widely open; it was contaminated by a bowel movement which had occurred, and it seemed justifiable to at least cut off and sew up the opening, in spite of the tender age and co-existing club-foot.

In this, as in the other three cases, I was impressed by the way the infant bore the operation itself. There was little shock, and it did not appear to make any difference whether the fluid escaped gradually or all at once.

Case 5. Loree E, age twelve weeks, was brought to me on June 15, 1907, on account of a large lumbar spina bifida. First child; is breast-fed, and seems very robust. No evidence of paralysis or other complication. On May 31, 1907, I did an incision of the sac, which proved to be a meningo-myelocoele. The sac was sutured with chromic catgut, the fascia around the opening brought together with heavy chromic gut, and

the skin sutured. Wound dressed with dry gauze, secured by Z.-O. plaster. No shock. Ethyl chloride-ether anesthesia.

Following the operation the child showed great restlessness, emitting a constant, excited cry, such as I have heard in cases of cerebro-spinal meningitis. The temperature rose by 7 p. m. to 103° F. At 10 p. m. the temperature had fallen to 100.4-5° F. During the first twenty-four hours 180 grains of bromide of potash and seven hypodermic doses of morphin (gr. 1-172 each) were given. From this time on the case progressed beautifully, nourishing well at the breast and sleeping quietly. The skin flaps were poorly nourished, and a superficial slough developed, from which there was only a slight discharge. But on June 29 one of the deep chromic gut sutures was removed and the following morning it was evident that leakage from the spinal canal had been going on. In spite of this, the baby was allowed to go home under the care of its family physician.

August 19, 1907. A letter to-day informs me that the leakage quickly stopped and the wound is entirely well. There is no hydrocephalus.

October 7, 1907. Baby is brought to see me to-day. Looks splendidly. No evidence of hydrocephalus or paralytic disturbance. Weighs 17¼ pounds.

August 24, 1908. Child is seventeen months old. Picture of health. Weighs 22½ pounds. Is beginning to walk, but has a decided valgus in both feet. Rubber adhesive strapping, and a lift of one-eighth inch on inner border of soles ordered to relieve the deformity.

June 14, 1909. Child is brought for inspection. In splendid health. Is twenty-eight months old. Has never had any spasms, and shows no hydrocephalus. She does not walk well alone as yet, and is said to drag her right foot some. Valgus deformity is pronounced in both feet. Lift on inner borders of shoes continued.

July 23, 1910. The child is still in splendid health and is very intelligent. No hydrocephalus; sphincters under perfect control; profuse growth of hair over operation scar, which is firm, but exhibits slight fluctuation to palpation. The valgus is still pronounced. I order a pair of Thomas heels for her shoes.

September 4, 1911. The child is a perfect specimen, except for the valgus deformity of the feet.

December 16, 1916. Loree is now ten years old. She enjoys perfect health, is very bright, and has no trouble with either bladder or rectum. She is brought to me on account of slight tenderness of the skin at the site of operation, but I do not see that there is anything to be done about this. It is to be noted that the valgus has entirely disappeared in the left foot and that the right foot is much improved, and her mother states that the position is steadily getting better.

Case 6. Jessie B., aged twenty days, first child, weight 6½ pounds, was brought to me on October 11, 1907, on account of a lumbo-sacral spina bifida, whose thin, transparent sac is beginning to ulcerate. Operation at noon on October 12, 1907, revealed a meningo-myelocoele. The fibres of the cauda equina had to be cut in order to replace them in the canal. The membranes were easily separated and closed with chromic gut, but much difficulty was encountered in closing the skin. In spite of undermining, and longitudinal incisions about two inches to either side, the wound was closed only under decided tension. The whole procedure occupied fifty minutes, and the baby stood the ordeal very well, although at times a good deal of anxiety was caused by its peculiar

breathing. Just after the operation there was a decided tendency to convulsions, for which ten grains of bromide were given by rectum. I do not know how much of this was retained. Morphin, gr. 1-150, by needle also given.

October 26, 1907. Owing to the tension on the sutures, the skin wound pulled open, but the membranes have remained tightly closed. Under daily dressings with balsam of Peru and castor oil, the wound has closed, except for an area about the size of a silver dime. The child is discharged to her home to-day. She weighs $9\frac{1}{4}$ pounds. Within a short time the skin healed entirely.

December 1, 1912. Jessie is now five years old. She is a well-developed, rosy girl. Shows evidence of slight hydrocephalus, which has been, however, entirely arrested. She does not control either her urine or feces. She presents a severe varus deformity in the left and an equino-varus in the right foot. There is an ulcerated spot on the front of the left ankle, the result of a neglected burn, and there is an inflamed spot on the right ankle, too, apparently due to injury in crawling. These prevent any attempt to correct the feet at this time.

Case 7. [The exact date in this case has been lost.] Baby D., age about two months, was brought to me in the latter part of April, 1908, on account of a lumbar spina bifida about the size of a small orange. The tumor presented the usual "egg-shell" translucency over a portion of the sac and proved to be a meningo-myelocoele. The operation was conducted in the usual manner and without special incident. Convalescence was uninterrupted, and the child is discharged in about — weeks. About six months later word was received from the father that the baby had died of an attack of acute pneumonia a few days before.

Case 8. Lloyd E. D., age twelve days, was admitted to my service at the Charity Hospital on January 9, 1909. He presented a large dorso-lumbar spina bifida, with very thin wall already ulcerating and threatening to rupture at any moment. On January 11, 1909, the usual operation of excision of the sac was done. The tumor proved to be a meningo-myelocoele. The child died on January 18, 1908.

Case 9. Anthony R., aged six months, was admitted to the Charity Hospital on June 8, 1914. He presented a lumbar spina bifida. Robust, well-nourished baby. Operation was done on the next day. The tumor proved to be a meningo-myelocoele. A few days after the operation, leakage from the sac began and persisted. Broncho-pneumonia developed and the baby died on June 22, 1914.

Case 10. Bruce M., aged three months, a fine, well-nourished baby, bottle-fed, was brought to me on December 30, 1912, on account of a large lumbo-sacral spina bifida, which proved at operation to be meningo-myelocoele. The sac was thin and transparent, and presented ulceration. Operation was done on January 1, 1913. The sac had been increasing rapidly in size, but there was no evidence of hydrocephalus. The right foot presents a congenital valgus, the left an equino-varus deformity. The child stood the operation well, and convalescence was uneventful.

This child has developed into a magnificent specimen, so far as his general health is concerned. No hydrocephalic symptoms have shown themselves, and the intelligence is above normal. During the beginning of his second year, manipulative treatment of the feet was carried on, but the deformity in the left foot proved very resistant. There is partial paralysis of the muscles of the leg, and there is anesthesia half-way up to the knee, in addition, there developed an enlargement of the lower end

of the tibia, which seemed in part responsible for the failure to correct the varus. In May, 1916, a partial cuneiform tarsectomy was done to correct the malposition. Healing was by first intention, and was made notable by the complete absence of any pain connected with the dressing of the wound or handling the foot. In spite of everything, however, and probably because of the motor and sensory paralysis, the child is unable to walk. There is a lack of control over the bladder and bowel. Otherwise his physical and mental condition is superb.

Case 11. Norman R., aged four weeks, was brought to me from Texas on May 29, 1916. Breast-fed, and well nourished. He presents a lumbar spina bifida, measuring perhaps four inches by three. The tumor is flattened and has a broad base. The defect in the vertebral arches is a large one, involving several of the vertebrae. There is no hydrocephalus. Operation done on May 20, 1916. During the ten days following, the baby had more or less fever, and showed evidence of developing hydrocephalus. The wound, however, healed nicely, and on May 31, 1916, the case was sent home.

No further information could be obtained as to the progress of the case until December, when I was informed that the little one had died a few days before. What was the exact cause of death I do not know, but I infer that the hydrocephalus continued to increase.

Case 12. A. P. was first seen by me in 1910 while suffering with an attack of typhoid fever. He presented a spina bifida occulta in the lumbo-sacral region. During September, 1916, he was brought to me on account of a very severe scoliosis, convex in the right lumbar region. He has no control over the sphincters, and is unable to use his lower limbs to walk. He is very intelligent, and is in every other respect healthy and robust.

DISCUSSION ON THE PAPER OF DR. FENNER.

Dr. E. Denegre Martin, New Orleans: I hope some of the members will have something to say in regard to this very interesting and important subject presented by Dr. Fenner. It is one of that class of cases we have for years looked upon as hopeless, especially in the pre-septic age. Nearly every case died from some cause, and usually from infection. I have had two cases myself, and both died. From what has been said and reported here to-day, I am confident that the first case died from infection and the second from loss of fluid, which continued unabated for about two weeks.

Several interesting points have been brought out by the doctor, and among them this one: These patients, without operation, die. He has saved 40 per cent by operation. Are we, then, in a position to say that these patients should not be operated on? I believe, with our improved technic, especially with the conditions under which we operate and are surrounded, together with every precaution for asepsis, we should attempt to save the children. I feel differently about this matter since hearing this paper. I was under the impression that if we saved these children we were saving hopeless cripples, but I believe, from what I have heard, we certainly should give them a chance.

There is no doubt in my mind that the great mortality in the past has been due to infection; therefore, we have removed one obstacle. Another danger is in the anesthetic. We are using to-day ether, which is certainly better than chloroform. It is given by experts, because we have

found it is not a simple matter, and those who are doing any amount of surgical work to-day must have an expert anesthetist at hand who thoroughly understands the situation.

The point I want to impress upon you, and which has been impressed upon me, is the fact that an unusual experience of this kind is rather remarkable. It is remarkable that any one man should have had fourteen cases of this kind, and with 40 per cent of cures. I believe that we should look upon these cases very differently in the future from what we have in the past.

I congratulate Dr. Fenner upon the work he has done. He has gone into the subject thoroughly, and I thank him personally for his effort.

Dr. R. L. Jones, Rayville: I would like to ask Dr. Fenner a question for my own information, and possibly his answer may be worth something to other members of the Society, namely, just what factor, if any, syphilis may have had in these cases?

During the last seven or eight years I have had two cases of spina bifida, both from syphilitic mothers. One lived about two months, became very much jaundiced or icteroid, and soon died. The other lived about three months and developed symptoms of hydrocephalus and promptly died. One of these children had a rather large tumor at first, while in the other it was not so large, and progressed for three months during its life. They were typical strumous children and had continuous sweating about the forehead, which we see in strumous subjects.

During the reading of the doctor's paper the idea occurred to me that he could tell us possibly if syphilitic infection amounted to anything as a causative factor.

Dr. J. T. Abshire, Leroy: I want to ask one question in relation to a point the essayist did not mention. In a case I saw there was an open canal over the lumbar region, with no integument whatsoever. The surface was absolutely raw. The child died in seven weeks from loss of cerebro-spinal fluid. I would like to ask if that kind of case is operable, and if so, when is the proper time to do the operation?

Dr. Fenner (closing): In regard to the etiology of spina bifida, I made no attempt to go into it so far as contributing influences play a part. We all recognize in the etiology of congenital deformities of every kind that there are three factors which, in any large group of cases, invariably seem to have influence. One is consanguinity between the parents, another is syphilis in the parents, a third is alcoholism. Any of these three factors predisposes to congenital deformity of all kinds, and I believe in many cases a syphilitic family inheritance may have something to do with the germinal defect, which is the real cause of deformity.

In regard to the case related by Dr. Abshire, I am astounded to hear of any case with an open canal in which no integument covered the spinal cord at all, and the child survived seven weeks. I would say that case apparently should fall under the head of partial spina bifida without spinal hernia, the spinal cord exposed, and it has been my belief that such cases inevitably die within a short time after birth. The survival of such a patient for seven weeks is extraordinary, and I would not believe such a case would fall under the head of favorable operative cases.

EARLY MANIFESTATIONS OF LEPROSY.*

By RALPH HOPKINS, M. D.

The first evidences of leprosy develop gradually and cause little or no discomfort. It may happen that a macule situated on some inconspicuous region of the body may escape the attention even of the individual affected, and is hardly ever recognized by him as being malignant. Symptoms, such as pain or itching, which would attract his attention, are usually absent, and, after discovery of the spot, he is quite likely to regard it as innocuous, referring it, in his judgment, as a "liver spot," or something similar. It so happens that most cases presenting for diagnosis are well advanced as potential factor for the spread of contagion, and prompt diagnosis is imperative. The large percentage of reported cases, as closely related as parent and child or brothers and sisters, emphasizes this necessity, inasmuch as a leper living in a large family is subjecting to infection those whose heredity makes them most liable to contract the disease.

It is noteworthy that the percentage of leprosy is much higher among men than among women, and that no age is exempt, except early childhood or infancy. Not nearly as many negroes as whites, and among the whites a large percentage have family histories showing leprosy.

HISTORY.—The history of its previous occurrence in a family is of service in focussing attention on the possibility of leprosy in a given case, but when this hint is not given one is not prone to be on the lookout for this disease, and to be confused by the history of some accident or injury being the cause of leprous lesions. Except in those cases in which the patient has some knowledge of leprosy, in which there may be a wilful purpose to deceive, the average does not regard his first symptoms as of serious importance, and usually attributes them to some trivial cause. Suspicion should be aroused by the history of persistent numbness in the hands or feet, particularly the fingers of the left hand, and most particularly the little finger of the left hand, if associated with some atrophy of muscle and consequent contracture of the flexor tendons. A macular eruption of long standing, coffee-colored, reddish or purple, should make one bear in mind the possibility of leprosy, particularly if the lesion be not scaly and be large in size.

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A patient's own diagnosis of ringworm or liver spots should not be accepted merely because a macule happens to have a circinate border or because it is liver-colored. Either symptom is equally characteristic of leprosy.

TYPES.—Two well-defined types of leprosy exist, depending on the habitat of the bacilli: skin and nerve. A combination of these two is usually referred to as the "mixed type." The skin type, which also has been called macular, nodular and tubercular, presents macules, nodules, and infiltrates patches on the skin. There usually is altered or abolished sensation in these lesions, and in advanced cases their occurrence on the face gives rise to the characteristic "leonine" appearance. In the nerve type, circinate macules may be found, but no nodules or infiltrated patches, and the sensory disturbances are not confined to individual lesions, but may occur over the entire region supplied by an affected nerve. This type has also been called anesthetic, maculo-anesthetic, and trophic. It is in this type that mutilation and deformity of the hands and feet occur, while the skin of the entire body may remain free of lesions, with the exception of an occasional rather evanescent macule. The pure type of nerve leprosy is far more frequent than the pure type of skin leprosy. Indeed, pure skin cases in the advanced and terminal stages are rare, as it often happens that nerve symptoms develop after the incipient stage, thus changing the type to mixed. On the contrary, it is not unusual for nerve cases, even when progressing to a fatal termination, to remain free from nodular skin symptoms.

The mixed type, with the involvement of both skin and nerve trunks, will include a greater or lesser number of cases, according to the strictness with which the classification is applied. Thus, a case with the nerve symptoms markedly preponderating over the skin symptoms strictly belong to the mixed type, but it is more usual to classify such a case as nerve leprosy, to prevent the greater part of all cases from falling into the class of mixed type. The tendency of leprosy in advancing stages extending over long periods of time (sometimes thirty or forty years) seems to be towards a gradual unfavorable progression of nerve symptoms, while skin symptoms often progress unfavorably only up to a certain point, and then commence to disappear. In a certain sense, skin evidences may be regarded as self-limited—that is, that if a case of nodular leprosy does not succumb during the first eight or nine years, the skin lesions are quite likely to disappear, and a mixed type become

trophic. The sequence, therefore, as regards changes in type, is that a type at first purely nodular may develop into a mixed type, and this mixed type in the course of many years may become purely nerve or trophic. Cases which at first are purely nerve are not nearly so liable to a change of type.

SENSORY DISTURBANCES.—The work of Head and Rivers in differentiating sensory cutaneous fibers into epicritic and protopathic offers a new angle from which to study the sensory disturbances in leprosy. This classification is based on the sensation lost on section of a nerve and on the order in which the cutaneous sensations of heat, cold, touch with light pressure, tactile discrimination, and pain are separately recovered with the regeneration of the cut nerve. The first fact brought out is that there exists, distinct from the true cutaneous sensation, a subcutaneous sensation, which is probably mediated through sensory fibers contained in nerves to the muscles, which carry sensations of heavy pressure, pain and position.

The terms epicritic and protopathic are applied only to the true cutaneous sensations.

The epicritic include sensations of heat, with differentiation between small differences of temperature, sensations of cold (small differences), sensations of touch, produced by light pressures, and tactile discrimination.

The protopathic include sensations of heat (extreme differences), sensations of cold (extreme differences), and pain. The protopathic fibers regenerate much more rapidly in a cut nerve than do the more finely discriminating epicritic. The evidence from a series of nerve cases now under observation at the Lepers' Home points, up to the present time, to a loss of epicritic before protopathic sensation, with the notable exception of pain. The majority of the cases show early loss of tactile discrimination, evidenced by an inability to distinguish whether the affected region is being touched by one or two points. If, for instance, even with as rough an instrument as the two points of a pair of scissors, an affected area is touched, the sensation of being touched by a single point is produced, even when the points are sufficiently far apart to give on a corresponding unaffected area of the body, a distinct sensation of two points. Early loss of epicritic sensation is also evidenced by inability to feel the light pressure of a piece of cotton drawn across the affected area, and by inability to distinguish between small differences of temperature.

The protopathic sensibility to extreme variations of heat and cold seems in these cases to persist longer than all the highly, the more differentiated epicritic sensations. This is not surprising, since, if the protopathic regenerate more easily after section, they may be regarded as of a hardier type, and consequently more resistant to the gradually increasing interference with nerve function.

In regard to the deep cutaneous sensibility, there seems but little doubt that it persists even after loss of the protopathic sensations.

The exception, previously noted, concerning pain, which is a protopathic sensation, but which is lost very early in leprosy, is exceedingly interesting, if taken into consideration with the fact that the nerve-endings mediating the pain-sense lie most superficially in the skin (Howell), for leprosy very strikingly has for its favorite locations on the body the most exposed surfaces.

A distinction must be made between the sensory disturbances which occur in the nerve type and those occurring in the skin type. In the former, the loss of sensation may involve large areas, being limited only by the distribution of the affected nerve or nerves. In the latter, the loss of sensation is distinctly limited to the lesion (macule, nodule or infiltrated patch) occurring on the skin. In the nerve type, skin apparently healthy, is anesthetic; in the skin type, the actual lesions only are anesthetic and the areas of healthy skin between them are normal as regards sensation.

In the nerve type the terminal branches of the left ulnar nerve are most frequently affected in right-handed persons, the tip of the little finger usually being the first area to show loss of sensation. Impairment of sensation gradually, sometimes in the course of many years, invades that part of the two adjacent fingers that are supplied by the same nerve, and at the same time spreads up over that part of the hand and forearm supplied by the ulnar nerve. It is not unusual for the loss of sensation to be so clearly defined as to mark distinctly the distribution of the nerve involved. The progression of insensibility with the lapse of time shows very clearly in the region of one nerve distribution, in the less complete impairment of sensation in the tip of the finger than in the hand and arm more recently involved. Other nerves may be involved in the early stages, and almost always are in advanced and terminal cases. Almost always the hands or feet are affected before any other part of the body. Anesthesia is a very late development, as is also motor paralysis. A very characteristic evidence of nerve leprosy is the

palpable enlargement of affected nerves, and the occurrence in them of nodules easily felt through the skin. It is not unusual for the ulnar nerve to attain the thickness of a man's finger.

TROPHIC DISTURBANCES.—An early result of impaired nerve function is manifested in atrophy of muscle. When this occurs in the hands it results in a contraction of the flexor tendons, which prevents full extension. This deformity usually occurs first in the little finger of the left hand, the other fingers becoming flexed later and giving use to the so-called "claw hand." The thumbs usually resist this tendency for a longer time than do the fingers, but may ultimately become flexed at the joint of the distal phalanx.

SKIN LESIONS.—The macular lesion is the most constant of the early skin manifestations in all types of leprosy; bullous eruptions are rare, and tubercles or nodules are usually preceded by macules or infiltrated patches. The occurrence of nodules as the first skin evidence is not nearly as common as that of macules, and it not infrequently happens that the nodules develop in the sites of pre-existent macules.

MACULES.—The number of macules found in a given case is very variable, as is also their size. A single lesion no larger than a dollar may be found, or as many as thirty or forty more. Some may be as large as the palm of the hand, and some even larger. The great size is an important feature, as it eliminates from diagnostic consideration the macular eruption of syphilis. The color varies from a light brown ("*café au lait*") to a dusky purplish red, depending on the extent to which inflammation exists. Scales are unusual, except after acute inflammation, such as occurs during attacks of lepra fever. The macules most often associated with the skin leprosy are uniformly colored, but in those associated with nerve leprosy the color may exist only on the outer border, in the shape of a ring, presenting in its center rather an atrophy than an excess of pigment.

In the type in which the color is uniformly distributed over the entire macule, two extreme varieties of chronic lesions can be recognized, dependent on the degree of associated infiltration. In the first variety little or no infiltration exists, and the spot presents a light brown stain, level with the skin, rather irregular in contour, with a border less likely to be distinctly margined than in the second variety. In this latter, marked infiltration exists, with elevation of the patch above the level of the surrounding skin. The

borders are already margined and the color is a purplish red. Between these two extremes in the organization of the lesion in these two varieties there are many grades of infiltration, giving rise to variations in color and shades of color, the extent of elevation and the clearness with which the border is defined from adjacent normal skin. Their location may be the buttocks, face, trunks or limbs, and they are usually not bilateral or symmetrical at first, but generally become so as the disease progresses unfavorably. During attacks of lepra fever intense inflammation may occur in these lesions, with associated pain, heat and swelling, and increase in the degree of redness. A third variety, evanescent in character, greatly resembling a toxic erythema, bilateral and symmetrical, has its favorite location on the extremities, and closely resembles erysipelas in its appearance and duration.

The type associated with the nerve leprosy in which the pigment is not uniformly distributed is more evanescent in character than are those associated with the skin type. This, together with their circinate arrangement, is in conformity with the resistance which the skin offers to the lepra bacillus in this type. The lesions grow from the periphery, making larger and larger rings, and the atrophic center enlarge "*pari passu*," maintaining a uniform width in the advancing band of eruption, with very much like the spread of ring-worm of the general surface, which advances in an increasing circle like a prairie fire, the center no longer furnishing the proper food for the conflagration. The margin of this advancing border is always well defined and presents but little infiltration, and is coffee-colored or reddish. The central part of the macule is often whiter than the normal skin of the region, and looks atrophic. They may occur on any part of the body, but the hands and head are not as liable as they are to the macules of the skin type. Their favorite location is on the shoulders, legs, thighs, buttocks and forearms, in the order named. The coalescence of two or more of such ring-like macules produces curious, wave-like figures, covering, sometimes, very extensive areas with meeting arcs of circles.

Bullæ are very rare, and, when they do occur, rapidly become pustular; the knuckles of the fingers are their favorite location. Diagnosis of leprous bullæ, without other evidences, in skin and nerve, is almost impossible without microscopical examination.

Nodules in leprosy are found earliest on the most exposed surfaces of the head and dorsal surface of the hands. On the head

they involve especially the forehead, lobes of the ears, nose, chin and cheeks. The scalp is always free. The appearance of the first nodules may be irregularly scattered, but, as they continue to appear and develop, they become bilateral and symmetrical. Their size is from that of a pea to a marble. The color usually is a dusky, reddish brown, and the nodules are spherical in contour. The coalescence of nodules that produce the gross disfigurement of the face, characteristic of leprosy, occurs in advanced stages and is accompanied by loss of the hair of the eyebrows and head.

MICROSCOPICAL EXAMINATION.—In regard to microscopical examinations, it is noteworthy that the acid-fast bacilli, which are the causative factors in the lesions of leprosy, can often be found in the nasal secretions, when even a careful search in sections from other regions is negative.

CONCLUSION.—In conclusion, the purpose of this paper has been to emphasize the very innocent appearance of the early lesions of leprosy, the absence of discomfort caused by them, and the ease with which diagnosis can be made if only care be taken to test for alterations in sensation in suspicious cases, and recourse to the microscope be had when necessary. The infrequency of leprosy, compared to other diseases in Louisiana, is not sufficient to justify the overlooking of the diagnosis, yet cases are often admitted to the Lepers' Home of many years' standing. It is not to be expected that there should be the same proneness to make the diagnosis of leprosy that there is to make that of malaria, but if we were all as suspicious of leprosy in cases presenting macules, nodules and sensory disturbances, as we are of malaria in cases of elevated temperature, the situation in regard to leprosy in Louisiana would be vastly improved.

AN OPERATION FOR HALLUX VALGUS.*

By EDWARD S. HATCH, M. D., F. A. C. S., New Orleans, La.

During the last few years four papers have appeared in the American literature on this subject. Dr. Metcalf went into a general discussion of the subject and tabulated fifteen different operations. Dr. Henderson wrote simply of the operative technic and advised the Mayo operation. Dr. Painter discussed the etiology and advised the Huter operation, plus the use of a metal splint to keep the proximal end of the phalanx from riding up. Dr. Field advised the transplantation of the tendon of the abductor pollicis from its usual insertion in the plantar surface of the base of the first phalanx to the periosteum covering the middle of the inner surface of the same bone. He only excises the bony projection of the head of the metatarsal bone. The main etiological factors are bad shoes, pointed, tight or short ones, or a combination of these errors. High heels also force the foot forward and relax the anterior arch. Hypertrophic arthritis is a causative factor, as is also gout. Some authors have claimed that patients with a congenitally long great toe are more apt to have bunions than people with normal feet, but in my experience this has not been observed. An intermetatarsium is of such rare occurrence as hardly to be considered. These patients usually have, with the bunion, a relaxed anterior arch with marked callouses under the metatarsal heads, and in some cases a plate designed to support the anterior arch will give some relief, but in all cases with much pain: operation is the only cure. The size of the bunion does not seem to be any index of the pain suffered by the patients, nor of the degree of hallux valgus present, and quite frequently I have been asked to operate for the cosmetic effect. Dr. Painter feels that hallux valgus is not an exostosis of the metatarsal head or its articulating phalanx, but is a lateral deviation of the great toe at the outset, accompanied by stretching of the inner capsular attachment and later by structural alterations of the articulating surfaces. The tendon of the extensor proprius pollicis becomes displaced to the outside of the joint, and with the angulation of the toe; its sheath becomes a pulley, which soon gives way under the tension, after which the tendon acts to still further increase the deformity. This is undoubtedly true in some cases,

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but the writer is sure that many of his cases show marked exostoses of the metatarsal head. As stated above, Dr. Metcalf has tabulated fifteen operations for the relief of this condition. The two in most common use are the Huter and the Mayo. The Huter operation consists in removing the metatarsal head with an osteotome or a gigli saw. This is done at right angles to the shaft of the bone.



DOUBLE HALLUX VALGUS.

AFTER OPERATION

The Mayo operation removes most of the articulating surface of the head of the metatarsal bone, leaving enough to serve as a weight-bearing portion. The rongeur forceps, used in cutting off the head, are introduced at an angle of 75 degrees. A burseal flap is then tucked in over the cut end and sewed to the periosteum of the first metatarsal. Wilson removes the part of the metatarsal head that protrudes beyond the phalanx. Porter removes three-fourths of the head of the first metatarsal, at such an angle as to include the inner tuberosity, and tenotomizes the extensor proprius pollicis at the level of the joint. All these procedures have disadvantages which may easily be overcome. The operators who

believe that a congenitally long great toe favors hallux valgus feel that it is an advantage to shorten the toe, as the Huter operation does, but cutting off the head of the first metatarsal certainly disturbs the balance of the foot. This bone is one of the most important portions of the foot in standing and walking, and its removal weakens the foot and throws the weight on the outside. There seems to be no reason for turning in a bursal flap, as is done in the Mayo operation. If the case is aseptic, there never is any stiffness of the joint.

A middle ground between the Wilson and the Porter technic seems best, and I have been doing the following operation for the last six years. Previous to this time I did the Huter operation, and while this relieves the pain the foot is certainly not as stable, nor do the patients get to walking nearly as soon as after the operation to be described.

A curved incision is made over the metatarsal phalangeal joint of the great toe, with the base downwards. The skin is dissected back and the bursæ carefully removed. The head of the metatarsal is dissected free, and, with an osteotome, a cut is made half-way through the bone at right angles to the shaft, just back of the head. The osteotome is then removed and inserted in the center of the shaft and the inner half of the head chiseled off. Any rough edges that are present are then smoothed off. If the tendon of the extensor proprius pollicis is much shortened it is tenotomized or lengthened. This happens in a very small per cent of the cases. This leaves a good portion of the outside of the head to articulate with the first phalanx. The joint has not been injured, and all of the projecting part of the head has been removed. The leaving of half of the head, with its articulating cartilage, makes, to my mind, a better joint than we get by taking off the piece of bone at an angle. The subcutaneous tissue is united by catgut sutures and the skin sewed with silkworm gut. A pad of felt is put between the first and second toes and a light plaster cast applied, including the ankle, to protect the foot. The stitches are removed on the tenth day and the patient allowed up about the twelfth to the fourteenth day. This operation allows the patient to be walking in two weeks, and they are able in eighteen or twenty days to put on any ordinary shoe. It is very important for them to wear a shoe with a straight inside last, and Dr. Porter says, "If you cannot dictate the shoes, do not do the operation." Several of my cases

will not wear a proper shoe and seem to be very comfortable in their more stylish types. In some cases, when the anterior arch is much relaxed, a spoon-shaped plate made of very light steel, 22-gauge, is necessary for complete relief.

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DISCUSSION ON THE PAPER OF DR. HATCH.

Dr. J. T. O'Ferrall, New Orleans: This operation that Dr. Hatch has suggested is one we are frequently called upon to do to relieve the excruciating pain these people have. The operation I have been in the habit of doing is virtually the Mayo operation, or resection of the metatarsal head at an angle of 45 degrees, without turning in the bursa. In that way we do not preserve any of the cartilage, but we keep the toe in its over-corrected position.

I have not seen any of Dr. Hatch's cases, but if it is possible to preserve some of the cartilaginous surface of the joint it will be of service in the use of the foot. To any one who has done much foot work, you will realize the necessity of preserving the tripod upon which we take our weight—that is, the bases of the fifth and first metatarsal bones and the os calcis.

The only thing I could mention that Dr. Hatch did not bring out in his paper is the reason why so many general surgeons, in doing this operation, fail, and that is because they do not appreciate that this is a fixed deformity. It is not a temporary deformity which will disappear with resection of the metatarsal head, but you have to get over-correction of the deformity for the purpose of preserving the correction.

I remember seeing a case at the Touro Infirmary not long ago, done by one of the general surgeons, and he had a recurrence of the hallux valgus. The bursa had been removed; the position of the patient's foot was just as bad, and relief was not complete. This was due, unquestionably, to the fact that he had not over-corrected his deformity and kept it so as to preserve the proper alignment of the foot.

Another great mistake which is often made, especially by men who are not doing orthopedic surgery, is the failure to support the anterior arch. In all these cases, whether you operate or not, it is necessary, in the first two weeks, and possibly first two months after operation, to properly support the anterior arch. As Dr. Hatch said, you may make use of a plate. I find it much more difficult to support the anterior arch with a plate than a specially constructed pad. Of course, if you have a longitudinal arch also to support, you can only do it with a plate, using the plate for both arches. If the patient has relaxation of the longitudinal arch, a pad, properly constructed, will be more comfortable and efficient. If by this operation which Dr. Hatch has described we can resect only a part of the metatarsal bone and preserve a part of the cartilage of the joint, there would certainly be a much more useful joint

afterwards. I have never seen, however, any trouble from a simple resection of the metatarsal head. As long as you preserve the cartilage of the joint—that is, the phalangeal part of the joint—there is no danger of an ankylosis taking place. You know, cartilage and bone do not grow together; therefore you will not have ankylosis.

Dr. E. Denegre Martin, New Orleans: This operation appeals to me as one of the mechanics in surgery based on proper grounds. A great many operators do not understand the principle. There is practically a dislocation of the bone at this point from the short shoe pressing out the joint to the outer side of the foot.

I have always done the Mayo operation, and, so far as I know, the operations have been successful. I have seen some of the patients I have operated on several months afterward and others several years afterward, and the results were good. You bring the phalanx around, and it comes then squarely over the metatarsal bone, producing a normal condition of the foot. The Mayo operation not only shortens the toe, but you have a very much weaker joint. Dr. Hatch's suggestion, I think excellent, as it does away with this feature of other operations.

Dr. P. B. Salatick, New Orleans: There is one question that comes up in connection with this operation, and that is the painful scar afterwards. I would like to ask Dr. Hatch how he takes care of that, and where he makes the incision?

Dr. A. B. Nelson, Shreveport: Dr. Hatch can answer the question and explain that. The scar is very easily disposed of by making a crescent-shaped incision, leaving the base of the flap above, causing the scar to be just at the solar margin. You can get at it in that way without leaving a scar on the side of the foot or at the top of the foot.

I have done only a few of these operations. I have done one or two in which I have resorted to resection of the metatarsal head and have cut the ligaments holding the toe in wrong position, put a piece of gauze between the toes, very much, as the doctor has shown here, after operation is complete. At any rate, the principle is the same. I dissected off the exostosis and the bursa and transplanted a portion of the tendon on the outer side of the toe. As I have said, I put a piece of gauze between the great toe and next to the great toe, put the foot in a plaster cast, and removed the stitches in about ten days, with very good results.

Dr. Hatch (closing): In regard to a painful scar, I do not remember ever having seen one. Dr. Flower, some years ago, went in on the inside of the joint, made an incision, then dissected out the bone and made his operation without having any scar on the outside of the foot. That hardly seems necessary. If you keep the scar away from the box of the shoe, so that there is no pressure from that source, there will not be any trouble.

In regard to tenotomizing these tendons: Sometimes, when the toe is pulled well over to the outer side of the foot, you have to tenotomize the tendons, it does not matter when or where; you can tenotomize the plantar flexors without any trouble at all. Tenotomize whatever tendons you wish and put the foot in a good position.

In regard to the use of plates, it is harder to apply a corrective plate to an anterior arch than to the longitudinal arch. A light-weight plate is all that is needed, and one often makes the plate like a spoon, with the bowl of the spoon put back of the metatarsal heads.

It is my experience that more women come for this operation than

men, and in many cases we cannot control their shoes just as we would like to. They will wear good shoes for a short time, and perhaps in a few weeks they will put on the ordinary pointed toes with perfect comfort. But, of course, it is better to control the shoeing, if we can possibly do so. I quoted Dr. Porter as saying that we should not touch a case unless we can control their shoes. In this section of the country, however, where the women are so particular about the looks of their feet, they are apt to wear pretty shoes; and they will wear them in spite of anything we can do to prevent it.

COMPLICATIONS AND SEQUELLÆ OF INFLUENZA,*

By J. M. MOSELEY, M. D., Arcadia, La.

Osler has said it is astounding the number of people who have been crippled for years following attacks of la grippe. Where la grippe begins, it is not hard to say, but how and when it will end no one knows. Possibly there is no disease less complicated and more fraught with graver consequences than influenza. Any of the ills of mankind may attack a person sick of la grippe. It is to be remembered that there is a tendency of influenza to develop latent diseases into active ones and to make organic conditions more severe. Dieulafoy says that influenza bacilli grow better when the culture medium is inoculated with the staphylococcus aureus. It is reasonable to suppose that the staphylococcus aureus would facilitate the growth of influenza germs when planted upon an animal membrane. When we stop to think that the bacteria most often associated with the influenza bacillus are the streptococcus, pneumococcus and the staphylococcus, then it is that we no longer wonder that any complication may make itself present.

Broncho-pneumonia heads the list of complications of influenza. It may make its appearance like typhoid fever, or be ushered in with all the overwhelming symptoms of a violent pneumonia. Between these two extremes you may find broncho-pneumonia manifesting itself. True, it is the most treacherous complication of influenza. To-day your patient is doing nicely, to-morrow he is at the undertaker's.

Infection of some of the atria possibly comes next, the frontal sinus being the one possibly most often attacked. Acute otitis media is a common complication. Iritis, optic neuritis, has been

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reported. Acute mastoiditis, acute mania, by some the increase of appendicitis, has been attributed to influenza.

Septicemia has been demonstrated by the cultivation of this influenza bacillus in the blood. Meningitis sometimes offers itself as a complication, and is the most dreaded, requiring 90 per cent death rate of its victims. The urinary system is not left out. Acute nephritis, pyelitis and acute cystitis are frequently seen as complications, and hemorrhage from any part of the body, especially the nose and throat.

Grippe colitis, grippe gastritis, and enteritis have been described by some writers; also cholecystitis, lobar pneumonia, gangrene of the lungs and orchitis.

Influenza, likewise, pays its respects to the vascular system, leaving, as some of its complications, endocarditis, pericarditis and arterio-sclerosis. Myocarditis may be seen, and be the cause of sudden death. Functional disturbances are not uncommon; bradycardia, tachycardia, palpitation, phlebitis and thrombosis are sometimes seen.

It is to be remembered that organic diseases may become more severe from the slightest attack of influenza. I have seen a small albuminuria, with no other symptoms, become a rapidly fatal and uncontrollable Bright's disease following influenza. So it is with the various heart lesions, which have heretofore given us no cause for alarm. Influenza may whip any of these conditions into action, and at once we see a grave condition—a degeneration of the heart muscles, a dilatation of the cavities, and death.

If after an attack of la grippe you are dealing with an intermittent type of fever without any apparent cause, look for a suppurative otitis or examine the urine for a pyelitis.

Those of our patients who insist on being about too early especially lay themselves liable to tuberculosis, chronic pleurisy, chronic grippe of the lung, spondylitis, neurasthenia, enlargement of the bronchial glands and a neuralgia that may attack them anywhere.

If the public could be educated to know that influenza is a serious disease and that the slightest attack may cause some of the gravest complications with which we have to deal, no doubt then the danger of many of the complications would be minimized.

DISCUSSION ON THE PAPER OF DR. MOSELEY.

Dr. J. B. Elliott, Jr., New Orleans: I would like very much to say one or two words on this paper. In the past winter we have had a great number of cases of empyema in the City of New Orleans. Going back twenty-five years, in 1891, 1892 and 1893, we had epidemics of empyema following the grippe. It is a well-known fact throughout the world that in the years you have the most influenza, in those years you have most empyema.

The thing that worries me a good deal in the present time is that cases come to us now who have had the grippe in December and January. They come to us in April and May in a rundown condition and feeling badly. You will find in their lungs spots that you diagnose as tuberculosis. There is dullness on percussion, bronchial breathing, occasionally râles, with all the physical signs of tuberculosis. I have seen three such cases in the past year which I should have diagnosed as tuberculosis had it not been for the fact that they had had influenza in the past few months. Examination of the sputum in such cases discloses no tubercle bacilli, and they eventually clear up. It is impossible, from the physical findings, to diagnose these cases one from the other. So far as physical signs go, they show tuberculosis.

For the past few months we have been trying to unravel these cases. We have to tell them whether or not they have tuberculosis, but in many instances we cannot do it. I am afraid to use tuberculin in these cases, and have no faith in the Von Pirquet test in patients over fifteen years of age. Of course, I treat them for tuberculosis all the time, and apparently they recover.

One other point I want to mention. It has happened to us in the last four months to have had a series of twelve cases of intense neuritis following influenza. I remember dining one day with a lady, when she was taken suddenly ill with an intense pain in the back of her neck; she had to be carried upstairs on account of the intensity of the pain and to be kept under opiates for three days. The neuritis occurred more often in the left than in the right arm. Most of these cases lasted two or three weeks; most of them have "colds," as they call it, yet there was no coryza, only intense neuritis.

Dr. Allan Eustis, New Orleans: I should like to add a few words to what Dr. Elliott has said. We see a great many of these, cases with cough continuing. They are most difficult to differentiate from tuberculosis.

I do not agree with him in regard to the use of the Von Pirquet test. I believe in a negative Von Pirquet. I do not think Dr. Elliott meant to convey the impression that the Von Pirquet test is of no value; he meant a positive Von Pirquet. A negative Von Pirquet, as Dr. Durel has insisted, or several Von Pirquet tests, certainly do clear up tuberculosis.

I wish to call attention more particularly to mediastinal adenitis which we find in these post-grippal conditions. Evidently there is infection of the bronchial glands with the influenza bacillus, and these bronchial glands continue to enlarge and cause cough, irrespective of practically all sedatives you may give. The point we must remember, in my experience, is that four or five days' absolute rest in bed will relieve the cough better than any expectorants we can give. The practical side is, if you get a positive D'Espine sign in the back and a constant cough, rest in bed is indicated and fewer medicines.

Dr. Foster M. Johns, New Orleans: Inasmuch as Dr. Elliott has mentioned the laboratory in connection with these cases of influenza, I wish to say that all over the State calls come in to the effect that here is a patient who has a chill, who has been shaking for an hour and a half, with extreme prostration, a temperature of 104° , and we are asked to diagnose whether the case is one of typho-malaria or influenza. We examine some of the slides for malaria and we find the leukocyte count extremely low, with a large amount of leukopenia. All text-books give an increased leukocyte count for influenza. For these types of cases the picture at this time of the year comes mighty near enabling one to make a correct diagnosis.

Dr. William H. Harris, New Orleans: I have listened to Dr. Moseley's paper very carefully, and he has certainly very beautifully elaborated the great extent to which the influenza bacillus may attack the human body. In some of the cases there are mastoid complications. We know, from autopsy examinations, that it is possible to find the lesions of influenza throughout the human body. There are no limits. They recover in almost every case.

As regards Dr. Elliott's remarks about persistent broncho-pneumonic patches, I can quite readily realize what the doctor said—that such lesions would be difficult to differentiate from tuberculosis, with patches scattered here and there throughout the lung. I should think the physical signs would be almost nil, also the finding of the tubercle bacillus. Where such is not the case, the question of influenza comes up, and while we have difficulty from an examination it is possible very often to show the agglutination reaction to the influenza bacillus just as we have the Widal reaction to show up for typhoid or paratyphoid bacillus; so it is possible to employ the Widal test. We can make use of the agglutination test, testing the patient's serum against the influenza. It is possible to resort to the complement fixation test along the line of the Wassermann, except applied to influenza. This is a more tedious procedure and is fraught with more difficulties and delay. The lung lesion of grippe is one of lobular pneumonia; no matter how massive or large, it does not tend to produce as typical a pneumonia as is produced by the pneumococcus. The lesion extends not only into the alveoli, but it is an interstitial type of lesion. We can get an inflammatory condition occurring along the lines that exist between the alveolar structures. So in that way we can conclude that even such lesions may involve the lung at another period of time, all clearing up and be very exceptional from a physical diagnostic standpoint.

Immunity to influenza is very fleeting. It does not last for any considerable period of time. These patients are prone to develop subsequent attacks. Laboratory tests in the production of a specific serum have not been a success. As yet we have not attained that end. I think we might just add, for the benefit of the laboratory man, an additional test, namely, we still have the agglutination test or the complement fixation test.

Dr. Sidney K. Simon, New Orleans: We may as well recognize the fact that the grippe poison leads to neuritis, and in line with what Dr. Elliott said about the cases of neuritis developing after a simple influenza, I recall a case I saw this winter following an innocent attack of la grippe, but what was called in the olden times a typical case of gastralgia. A young man was taken down suddenly in his office. Three or four days after he had sufficiently convalesced to return to his work he was seized

with excruciating pain in the epigastric region; the pain radiated into the region of the liver, and when I first saw him, not always having been aware of the diagnosis of pure gastralgia, I was inclined to believe I was dealing with a gall-bladder or appendix condition. I followed the young man's case with a great deal of concern, because I was very much interested in his case in various ways, and I was very glad to find a simple dose of codein, one-half of a grain, was sufficient to relieve the young man so that he could go back to work that afternoon. The next morning, at the same hour, a similar attack occurred. The pain was so excruciating that he fell to the floor and rolled in agony. As I was not called at that time, he had recourse to one of the neighboring offices for a morphin injection. That was the end of the whole attack. The following two or three days he never had a repetition of the attack. I have considered this matter several times in my mind, and I am positive there is a non-inflammatory condition. We made a leukocyte count and found a normal condition. There was no fever at any time. I believe that this case represents a pure case of post-grippal gastralgia, a real neuralgia, not of the stomach, but of those nerves lying behind the stomach, the solar plexus and plexuses of nerve that have control over the unstriated muscular tissue in the upper abdomen. I thought I would relate the case, because it was a striking instance of what Dr. Elliott has seen in his cases.

Dr. G. M. G. Stafford, Alexandria: Just a word in regard to gripe appendicitis. The doctor mentioned in his paper that there is some probability of appendicitis resulting from gripe.

For the last few years we have had a great deal of gripe, or influenza, in Alexandria and around, and I have noticed that when it was in epidemic form there was a great increase in the number of cases of appendicitis. Operation revealed in these cases that it was a real appendicitis. I do not know that it is a coincidence, but I have noticed it particularly when we have had a great deal of gripe. I am inclined to believe myself that gripe has a good deal to do with the causation of the appendicitis.

Dr. Thomas E. Wright, Monroe: The liberal discussion of this paper is an index to the interest we hold in this particular disease, largely because we have just passed through an epidemic in this part of the country. It is a further index to the thorough and painstaking manner in which the author has covered the subject. The doctor has mentioned one feature I am inclined to believe is of more than passing importance. I refer to the weakness, depression and prostration that follow an attack of influenza. This feature of the disease is a severe tax upon the doctor's patience. His gripe patients return to the office from time to time with a constant and more or less continual complaint of weakness and depression. The shortness of breath on slight exertion is a part of the general process of weakness. It appears that very little can be done to overcome this, aside from a proper and sustaining diet, rest in bed, the usual tonics, with rather large doses of strychnin. Open air and sunshine, with congenial environments, are by no means unimportant.

Another point: One of the complications I would like to discuss is pneumonia. Not infrequently grippal pneumonias appear to be more or less central in origin, and day by day the physical findings grow more suspicious, until typical findings of pneumonic spots are easily demonstrable. I have seen such cases during the past season. The usual symptoms of a grippal pneumonia were present, with possibly only harsh

breathing over the affected areas. Within two to four days the same spots showed bronchial breathing and other signs of solidification. I mention this here because we are apt to be satisfied with one or two early examinations when there is a degree of uncertainty as to whether or not grippal pneumonia is present.

Dr. Moseley (closing): I want to thank the members for their free discussion of my paper, and to say a word or two about neuritis, which was brought up, from my own standpoint. I have just suffered from an attack of neuritis of the left shoulder following an attack of la grippe. The pain I suffered, no one knows. Dr. Nelson prescribed for me. When a patient comes to you complaining of some pain, and you have a history of grippe, give that man something. Don't say to him, "You have got neuralgia," and let it go. I found relief for three hours and then the pain would return. One is inclined to take aspirin, codein, morphin, etc., for the relief of the pain. Dr. Knighton and Dr. Nelson changed me over to some electrical treatment and I took it for a while. Acting on their advice, and taking electrical treatment, codein, rest and quiet, in time I got well.

I want to say something about what Dr. Eustis said with reference to rest in grippe. I think we overlook the bronchial glands a great deal. I have thought of these cases of cough in which we have grippe and we find no particular reason for the coughing. We examine these patients, and I have figured it out that it is the enlarged bronchial glands that cause the coughing. It is well to remember that point.

Bacteriologists and pathologists are in doubt if you send specimens of various kinds to them, thinking they are dealing with malaria and most anything else.

As to appendicitis being associated with grippe or being a complication of it, I do not know. It is mentioned by some. Since grippe first made its appearance in this country some years ago appendicitis has been on the increase, and whether it is due to grippe or not I am not able to say.

OVARIAN TRANSPLANTATION—REPORT OF CASES.*

By WM. D. PHILLIPS, B. S., M. D., New Orleans, La.

At the meeting of the Texas State Medical Society last May I reported twelve cases of ovarian transplantation, collected from some private work and our gynecological service at the Charity Hospital. It is my purpose this evening to report further observation of the above-mentioned cases and also to add to the list three additional cases.

Ovarian transplantation has been practiced for the last twenty years. Dr. Robert T. Morris, of New York, was the first to make a clinical report on the subject. He reported two cases in the *New*

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York Medical Journal, in 1895, one a woman, 26 years of age, from whom he removed both tubes and ovaries, and at the same time transplanted a small piece of ovary in the interior of the stump of the right Fallopian tube. She became pregnant a month later, but lost a well-developed fetus by abortion at the third month. Menstruation lasted for more than four years. His second case, a woman aged 20, with an infantile uterus, who had never menstruated, received an ovarian graft in the fundus of uterus, the graft being taken from a patient over 30 years of age. Eight weeks later she menstruated profusely for ten days, then six weeks later for five days, and continued regular for over five years. Since this report the literature has contained numerous reports of ovarian transplantation by Dr. Franklin Martin, of Chicago; Drs. Simpson and Chalfant, of Pittsburg, and Prof. Tuffier, of Paris. Some of the cases reported were of the hetero-plastic type, the majority being of the auto-plastic type—*i. e.*, the process of transplanting a portion of ovary to some other location in the same patient. This form seems to have been the most successful.

My experience in this work has been only of the auto-plastic type, and from a practical standpoint it seems the most feasible.

During the course of treatment and necessary surgical procedure in the more extensive pelvic infections, or cystic disease of ovaries, the question often arises, "Should we be conservative or radical?" Of course, the history and diagnosis of the type of infection will assist in making the decision and our desire to preserve ovarian tissue for the all-important function of menstruation will cause us to leave an ovary, or part of an ovary, not because we feel it healthy, but because we fear the symptoms of artificial menopause.

Resection of an ovary is often followed by hematoma, which produces symptoms almost as great as the primary condition. So much is this true that I have of late adhered to one or two methods of treatment—remove the ovary entirely, or puncture the small cysts and leave it alone. And it is for those cases in which the destruction of ovarian tissue is so extensive as to require removal that transplantation is of value. Briefly, the indications might be grouped as follows:

(1) Tumors or disease of ovaries occurring in young subjects under forty years of age, where the object is the relief of pain and the preservation of menstruation. (2) After loss of Fallopian tubes an attempt is made to maintain future possibilities of preg-

nancy. (3) After the removal of both ovaries an attempt to relieve patients of artificial menopause, or enable them to become pregnant.

As to the location or site of placing the graft, I have found that it differed with each investigator, some operators selecting the wedge-shaped opening, where the Fallopian tube was dissected away; others preferred the broad ligament, and yet others use the abdominal wall, placing the graft to either side of the median incision on the peritoneum—in the rectus muscle or in the adipose tissue on top of the fascia.

The indications for operation in the fifteen cases reported in this paper were for the relief of pain and preservation of menstruation. Five of these cases had previously been abdominal operations and two were cases in which resection of ovaries had been done. The technic of the operation was as follows:

After examination and determining that complete removal of both ovaries was necessary the ovarian vessels were ligated and ovarian tissue removed. Section of ovaries which were found to be free from infection and cysts were made with a fresh knife and the most suitable pieces were placed in normal saline solution at a temperature of 100°, the size of the graft varying from one-fourth of a normal ovary to sections one-sixteenth to one-eighth of an inch in thickness. In some cases we made use of a single piece and in others of several small sections.

The abdominal wall, just to the side of the median incision, was the site selected for placing the transplant, making a pocket to the side of the median line of incision in the adipose tissue, or underneath the sheath of the rectus. This location is preferred because of the ease with which you can remove the graft should it give trouble, and also because of the abundant blood supply and the fact that it is not so easily traumatized. No sutures were used to retain the graft in position.

The immediate post-operative condition of these patients was somewhat alike, several of them complaining of symptoms of artificial menopause, such as hot and cold flashes; others complained of swelling and pain in the region of the graft. The symptoms gradually diminished and in about three of four months the menstruation appeared, the hot and cold flashes disappeared, and the patients, to all appearances, seemed normal. It was noticed that the congestion and swelling of the graft preceded the menstru-

ation several days, and in some instances the graft was tender and painful. The absence of dysmenorrhea was particularly noticeable in those cases which had previously suffered pain during menstruation.

The life of the transplant varies in individual cases. In one of our cases the graft was active and functioning two and a half years after operation. Some observers have made similar observations five years after operation.

The question as to the advisability of transplanting ovarian tissue in cases in which either a supravaginal or complete hysterectomy was done has been much discussed, and the concensus of opinion is that ovulation without menstruation is useless. Consequently, it does not seem advisable to transplant ovarian tissue in cases in which it is necessary to remove the uterus.

In the fifteen reported cases, dating from December, 1914, so far as I know, ten menstruated after the operation. I have been unable to hear from four of them. One which did not menstruate was a case in which the uterus had been removed. One case (5) has stopped menstruating.

In conclusion, I wish to say that it is my belief that this form of ovarian grafting is not only safe and possible, but in suitable cases will produce the most satisfactory results. The ovarian transplant does perform the function of ovulation, which will continue for a number of years, and even at that time, if it does atrophy, the patient will have had time to adjust herself to the new condition and the symptoms of the artificial menopause will be less abrupt.

The selection of a superficial location for placing the graft is advisable, because of the ease in which it can be removed should conditions necessitate it.

The use of iodine or heat on the ovarian graft to destroy infection in suppurative cases is hardly necessary and does not seem advisable. In only one of such cases did we dip the graft in iodine. This case was one in which the graft had been placed in an unsterile container, and, before using it, iodine was applied. This patient menstruated two months after the operation.

I wish to thank Dr. C. Jeff Miller for the privilege of using some of his cases in this report, and also Dr. E. L. King for assistance in obtaining data.

CASE REPORTS.

Case 1. Mrs. A., age 28; four years before left ovary removed, right ovary resected and appendix removed. She seemed to have improved for a while; later began to suffer pain in right side, also dysmenorrhea. Examination showed enlargement of right ovary and retro-displacement of uterus.

Operation: April 29, 1915; trachelorrhaphy, suspension of uterus and right oophorectomy. Sections of ovary were transplanted in adipose tissue of abdominal wall on both sides of median incision.

Letter from patient June 15, 1915, says that she was relieved of pain, but does not mention menstruation.

Letter from family physician April 14, 1916, says that menstruation appeared two months after operation, with little pain. She has been regular every month since and has suffered no symptoms of artificial menopause.

Case 2. Mrs. J., age 32; two children, oldest 12, youngest 11 years. For the past five years has suffered pain in both sides of abdomen, marked on right side; bladder trouble for past three years.

Operation: October 26, 1914; curettage, trachelorrhaphy, perineorrhaphy, double oophorectomy for hemorrhage cysts. Parts of both ovaries were transplanted on peritoneum under rectus muscle to side of median incision. July 5, 1915, did not menstruate for five months; since then every month.

Case 3. Mrs. C., age 36; has had three children, oldest 17 years, youngest 13 years. Suffers abdominal pain and dysmenorrhea. Diagnosis—chronic salpingitis with adhesions; cystic disease of ovaries, five years' duration. Present trouble probably dates from miscarriage.

Operation: November 26, 1914; perineorrhaphy, removal of both ovaries and Fallopian tubes. Small portion of ovary transplanted left side of median incision. No further report.

Case 4. A. V., age 30; single; complaint of pain in abdomen, most marked on left side; evidence of Neisserian infection.

Operation: December 22, 1914; double salpingectomy and oophorectomy. Section of right ovary transplanted under right rectus sheath, just to side of median incision. Because of infection from pus in Fallopian tubes, small drain was placed in left side of abdominal wall.

January 18, 1915, patient returned for examination and was alarmed because both breasts were full of milk, also complained of hot flashes and dizzy spells, severe at first, but later diminishing.

April, 1915, menstruation appeared and lasted four days, some pain; was regular, free from pain and of normal duration every month after this, until November, 1915, at which time it lasted two weeks.

Examination December, 1915, ovary palpable in right side abdominal wall, size of normal ovary.

July 1, 1916. Menstruated regularly until January, 1917; then every two weeks; lasts five to six days. Swelling right of incision.

Case 5. Mrs. A. S., age 30; married; no children; one miscarriage; eight years ago left ovary and tube, also part of right ovary, had been removed. Cause of consultation at later date was because of severe pain in right side and dysmenorrhea; so severe that she was obliged to take sedatives.

Operation: November 14, 1914. Because of sclerosis of right ovary it was removed; also right salpingectomy was done. Part of right ovary was transplanted on the peritoneum at the side of the median incision.

May 7, 1916. Patient says she is feeling fine and menstruates regularly every month. Menstruation ceased December, 1917.

Case 6. Mrs. H. D. W., age 34; diagnosis, double suppurative salpingitis and ovarian abscess.

Operation: April 4, 1915; double salpingectomy and removal of both ovaries. Pus was found in both ovaries. Part of ovary was transplanted in adipose tissue of abdominal wall, on both sides of median incision.

May 12, 1915, patient menstruated freely for eight days. June 9, 1915, patient menstruated naturally for five days, and this continued every month afterwards. April 5, 1916, she feels very much improved and free from all previous symptoms; has gained in weight and has no symptoms of artificial menopause; she notices some tenderness in region of graft two days previous to menstruating.

Case 7. Mrs. J. P., age 22; abdominal pain and dysmenorrhea. Diagnosis, laceration of cervix, complete laceration of perineum, suppurative salpingitis.

Operation: June 29, 1915; trachelorrhaphy, perineorrhaphy, double salpingectomy and double oophorectomy. One-fourth of right ovary transplanted in adipose tissue of abdominal wall to the right median incision; drainage used in left side of abdominal wall.

August 2, 1915, patient writes that she is feeling very well; no mention made of menstruation.

Case 8. M. S., age 36. Complaint, pain in abdomen, dysmenorrhea and metrorrhagia.

Operation: October 27, 1914. Because of leiomyoma of uterus and chronic salpingitis, a supra-vaginal hysterectomy was done, also a double salpingectomy and oophorectomy. A small section of ovary was transplanted in the adipose tissue at the side of median incision. No further report.

Case 9. Mrs. M., age 29. Complaint, pain in abdomen, most marked in right iliac region. One year before a double salpingectomy had been done; Neisserian infection.

Operation: November 29, 1915. Because of cystic changes in ovaries and adhesions, a double oophorectomy was done; small section of left ovary was transplanted on peritoneum under right rectus muscle, just inside of median incision. Patient menstruated normally in February, 1916, also March, 1916, and at that time was feeling very well and relieved of her symptoms.

Case 10. E. G. (colored), age 24; no children. Complaint, pain in abdomen, metrorrhagia and dysmenorrhea. Diagnosis, chronic salpingitis.

Operation: January 4, 1916; both ovaries and tubes removed; three small pieces of left ovary transplanted in adipose tissue at left of median incision. Drain placed in right side abdominal wall. No further report.

Case 11. E. C. (colored), age 26. Complaint, pain in right side, which has grown worse at times; suffers metrorrhagia, menorrhagia and dysmenorrhea. Two years before had right salpingectomy and removal of right ovary, also resection (partial) of the left tube.

Operation: January 25, 1916; removal of left ovary and transplantation of small sections of ovary under skin in adipose tissue to right of median incision.

February 1, 1916, patient reports that she menstruated from January 29 to February 1. February 5, graft enlarged and tender. February

11, slight discharge of blood, dizzy spells and hot flashes; dizziness seems to be getting worse. March 16, 1916, uterus in good position, freely movable; graft easily palpable in right side of abdominal wall; dizzy spells and hot flashes improving. April 24, graft enlarged and tender; hot flashes much better. May 1, graft much enlarged and very tender; hot flashes almost gone.

Case 12. Mrs. S. M., age 23. Complaint, pain in right side and dysmenorrhea. At a previous operation left tube and ovary were removed, also appendix.

Operation: February 29, 1916. Because of cystic condition, right ovary was removed; small piece of right ovary was transplanted in adipose tissue of abdominal wall to the right of median incision. No further report.

Case 13. W. M. H., age 19. Family history negative. Menstrual history previous to this trouble has been normal; no pregnancy; no digestive disturbances or severe attack of abdominal pain.

Examination October 22, 1916. Retro-displacement of uterus. Salpingitis. Wassermann reaction negative. Urethral and cervical smears negative.

Operation: October 31. Abdomen opened in median line; both tubes and ovaries diseased and bound down in dense adhesions. Because of extensive inflammatory condition a double salpingectomy and double oophorectomy was done. Coffey suspension of uterus was also done. Section of ovarian tissue was transplanted under skin in adipose tissue right side of incision.

Patient developed temperature about five days after operation, and twelve days after operation slight amount of pus was found in upper portion of wound. This condition cleared up and the graft was apparently not involved.

Case 14. Mrs. N. L., age 23; married two years; one child five years old, normal delivery; no miscarriage. Admitted June 17, 1916, suffering pain in left side. History of painful menstruation and profuse and irregular menstruation.

Examination showed extensive inflammatory condition in lower pelvis; marked tenderness on both sides of uterus and uterus adherent.

Operation: June 23, 1916. Both ovaries and tubes removed. Three small pieces of ovarian tissue were transplanted under skin to the right side of incision. Menstruated July 26; lasted until August 2; appeared August 8, lasted until August 11; appeared August 14, lasted until August 22, and after then appeared every month and lasted about five days. She has suffered no cramps or nervous symptoms.

February 21, 1917, she consulted me because of swelling in left side of incision. I found on examination that the graft was distinctly palpable and slightly tender on palpation.

Case 15. Operated June, 1916. Mrs. J. Suffering pain in abdomen. History of irregular and profuse menstruation for several months. Abdomen was opened in the median line. Both tubes and ovaries found bound down by adhesions and diseased. Because of cystic condition of ovaries they were removed; uterus was left intact. At the end of operation several small sections of ovarian tissue were placed in adipose tissue on top of fascia to the right of median incision. Patient had no further trouble and left the Hospital in two weeks. Two months after, patient began to menstruate and suffered no pain. No further report.

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DISCUSSION OF PAPER BY DR. W. D. PHILLIPS.

Dr. E. L. King: The menopause is less severe in negro women than in whites. I endorse Dr. Phillips' remarks in the placing of the graft beneath the skin, because, in most cases, this graft is not usually clean, and, should any infection result, the graft can be easily removed.

Dr. H. E. Bernadas: I have done quite a few hysterectomies with no symptoms of menopause; just why, I am unable to say. I believe that Dr. Phillips' technic is excellent.

Dr. Ney: The work done by Dr. Phillips is of interest, especially to the general surgeon. Its application is of especial interest to those cases of menorrhagia where it is necessary to remove the ovaries to prevent menopause. I would suggest that the graft be left in the cul-de-sac rather than in the sterile normal salt solution, which may or may not be at body temperature.

Dr. Phillips (in closing) stated that he agreed with Dr. King that the symptoms of the artificial menopause do not seem to be as pronounced in the colored woman as in the white, but in either race, if suitable cases are selected, ovarian transplantation does seem to modify and lessen the symptoms of the artificial menopause. It has been noted that the cystic changes in the ovarian tissue may persist in the graft after transplantation, and for this reason it is advisable to select a superficial location for placing the graft, in case it may become necessary to remove it at a later date.

 THE REGISTERED NURSE.*

By JNO. T. CREBBIN, M. D., New Orleans, La.

The time is opportune to call your attention to the registered nurse. Doubtless all physicians are aware that Act No. 138 was passed and approved July 10, 1912, creating a Nurses' Board of Examiners, consisting of five physicians selected by the Governor from a list of ten names recommended by the Louisiana State Nurses' Association. The duties of the Board are to examine and register nurses and to arrange reciprocity with other Boards having a like standard with this Board.

Each applicant for nursing must submit a certificate of her preliminary educational training, stating that applicant has covered,

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with all other qualifications, at least one year of high school work. Formerly almost any able-bodied woman would answer. When one recalls that until recently physicians were only required to have one year of high school, preliminary to their university course, the same now being required of a nurse, one can appreciate the high standard which has been reached.

It may be of interest to know that at the annual session of the American Nurses' Association held in this city last year the Louisiana Board was declared one with the most progressive and excellent system in the United States. Since then some of our forms have been adopted by other Boards.

It is only within recent years the profession of nursing has taken the place it deserves, which high standard owes its attainment and present recognition to the coöperation of the Nurses' Associations, the Boards of Examiners, the superintendents and the instructors and physicians of training schools.

All training schools and hospitals must be inspected, guaranteeing proper quarters, with hygienic surroundings, for the nurses; the necessary facilities for teaching, that the required branches are being taught, with sufficient hours for practical and theoretical training, the requisite number of beds and sufficient equipment throughout the hospital. These, in a few words, are the responsibilities of the examiners, all of which entails much labor and time.

A certificate of registration is proof conclusive that the holder has complied with all the requirements of the Board as well as a guarantee to the physician and family that the nurse has graduated from an accredited training school. It is also a bond of efficiency. The certificate issued by this Board is recognized by ten other State Boards, and it is fair to assume that many more will shortly reciprocate.

We have registered 900 nurses. This in itself is evidence of the amount of work accomplished. Just as there is a difference between a licensed physician and one who is not, so is there a difference between a registered and an unregistered nurse.

We urge all physicians to employ none but a registered nurse. By so doing you will not only help to upbuild a noble profession, assisting those who are complying with the requirements of the law, but you will be safeguarding the welfare of your patients as well. Surely, from 900 registered nurses a choice may be made.

At no period in the history of our country is a registered nurse more in demand than at the present. She stands confronted by an

immense task. In the next few months she will play a greater part in the life of the nation than ever before. She is far better fitted to take her place than the vast majority of Americans realize. She has been growing and extending her activities and proficiencies in the last few years at such a rate that the public has hardly kept apace.

As the common center of organized American nursing, the department is not only an asset to this nation but to France, England, Belgium and the other nations that look to us for succor. This is the time for every nurse to understand just what her duty is, what she can do, and what may be expected of her, so that she may by intelligent cooperation help to solve the nation's problem in the most effective way. Think what an important contribution toward preparedness the trained nurse offers!

Let those who stand a united people in the mighty conflict feel that the scientifically-trained nurse is not only the soldier's but the nation's bulwark, and we confidently believe she will not be found wanting when the call of the country comes.

DISCUSSION OF PAPER BY DR. J. T. CREBBIN.

Dr. C. A. Bahn: The nursing profession is asking to-day the same recognition of the medical profession that the medical profession asked of the public twenty years ago. The registered nurse feels that she should be entitled to recognition and support of the medical profession, because she has at least a moderate preliminary education; because she has spent three years in systematic and regular study; has recognized universally and has complied with the law of the State. These are the principles which enable the medical profession to receive recognition. It is only by means of an Examining Board that conditions can be standardized; that the profession and the public can be warranted the best service; that the nurse can be warranted a uniform and balanced course; with proper mental and moral environment; that the training school can be warranted a uniformity of requirements, thereby eliminating unfair competition. In other words, the Louisiana Nurses' Board of Examiners stands for a square deal to the public, the profession, the nurses and the training schools. In the past four years of its existence it has issued approximately 500,000 pieces of mail to the nursing and medical professions. The Louisiana Board is conducted on lines of efficiency and economy. In fact, there is no nursing board in the United States in which the same amount of work is accomplished per year as in Louisiana. The Board, in its yearly inspection of the training schools, obtains accurate information concerning the branches of study, hours, lectures and clinic in each branch, curriculum, facility for teaching, nurses' quarters, and so forth, and inspects the training schools on this basis. There is not a student nurse in an accredited training school who has not filed a detailed description of her preliminary education, as verified by her principal or by affidavit.

Dr. Genella: I have been shown several circular letters and would like to know why the Board sends out circular letters requesting the nurses to register.

Dr. J. F. Oechsner: On one or two occasions the physician and patients were waiting for a nurse who did not keep her appointment. I think these breaches of nursing ethics should be taken up by some one.

Dr. Storck: I would like to know whether the nurses have to pass an examination after they graduate to be registered?

Dr. Ney: In the base hospital service in France it was most forcibly brought to my attention that educated women make more efficient nurses than those without education.

Dr. Eustis: I believe often that the nurse loses time and money to keep appointments, especially in maternity cases, for which she receives no compensation. I mention this to show that there are two sides to the nursing ethics problem.

Dr. Crebbin (in closing): Replying to Dr. L. J. Genella: When the Board was first organized it was necessary to find out who was practicing nursing and who was not. Hence, circular letters were sent to those who were practicing and eligible for registration.

Replying to Dr. Oechsner: The Louisiana State Nurses' Association is one of the most aggressive organizations in the State, and if the doctor will submit the matter to them I feel sure they will be prompt to give the matter consideration and to secure a relief of any existing evils. I know that the Nurses' Association is as much interested in the ethics of its profession as the medical fraternity.

Replying to Dr. Storck: The examination is conducted in the following branches, composed of ten questions: Medical nursing, surgical nursing, chemistry, bacteriology and hygiene, materia medica, physiology, anatomy, dietetics, obstetrics, infant feeding and pediatrics. These examinations are conducted semi-annually in Shreveport and New Orleans.

The Louisiana Nurses' Board of Examiners will be more than pleased to furnish information concerning its work or the training schools to any physician in this State.

THE PARENTERAL INJECTION OF MILK AS A CURATIVE AGENT.*

By T. J. DIMITRY, M. D., New Orleans, La.

The interesting possibility of what is to be obtained by the use of protein parenterally injected offers an exciting study that should stimulate investigation entirely justifiable.

The arguments necessary to an appreciation of the subject demands an elementary knowledge as to what is a serum, a vaccin and a toxin. Unfortunately, some terms have been handed down, and occasion confusion, and it is well to adhere to the familiar nomenclature, yet remember that in vaccins the dead culture or microorganisms which are used have nothing to do with cows, nor

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is the procedure directly analogous to vaccination, which is performed with a living virus.

In the preparation of the vaccins we first determine the organism causing the disease, and these organisms are cultivated on some acceptable media; after growth they are washed from this media, standardized, and finally heated to 60° centigrade for an hour and then tested for sterility. This boiling has destroyed all reproductive powers, they are neutral, they are "dead," and when you are using a vaccin you are using a sterile organism; hence, it behooves us to study the dead organism, for we are not dealing with, as Weisman had designated the "biophoric molecules," which is the living matter endowed with specific properties. Antitoxins and serums differ greatly from the vaccins. In the production of antitoxin we are not dealing with dead organisms, as in the vaccins, but with a toxin secretion from the living organism; this toxin obtained is injected into an animal and the serum afterward taken from the animal is used as an antitoxin. In most organisms there is no toxin secreted in the culture media.

In serum the live organism is injected in different doses into an animal until this animal has become immune to large doses, and then you obtain the serum of this animal for curative purposes. This serum is antibacterial and not antitoxic. Diphtheria antitoxin globulins are a very favorable culture media for the growth of Klebs-Loeffler bacillus, but a serum acts quite differently, for a serum is antibacterial.

Apologizing for these elementary facts reviewed, and as it is vaccins that concern us primarily, our beginning is a study of dead microorganism, which do not secrete a toxin. Further consideration carries us to an analysis of dead substances. Bacteria are much like the higher animals in their life process. They demand food, they select, assimilate and excrete, but when dead they are complicated chemical substances, much as are the tissues of higher plants and animals. The study, chemically and physiologically, of microorganism, also vegetable life and animal life, shows that they contain a poison, and, chemically, this poison may be different, but physiologically they cannot be differentiated by symptoms induced.

The poison obtained from the typhoid bacillus, that from egg albumin and from hemp seed kill animals in the same doses, with the same symptoms and the same lesions. Adami says (Vol. 1,

General Pathology): "If we make a broad survey of all forms of life, animal and vegetable, we find there is one order of substances common to and to be extracted from all [dead] cells, however simple or however highly differentiated, namely: proteids, or, as it is becoming now the custom to designate the wider group of related substances, protein." There is no other constituent so common to all cells. It is true that when we analyze living matter, to be able to isolate the protein, renders that matter dead; hence, we recognize that they manifest little of the phenomena which we note as proper to living matter. "Life is bound up with the presence of proteins." These proteins, common to all dead cells, are complex compounds of nitrogen, carbon, oxygen, hydrogen and sulphur; the highest forms contain also iron and phosphorus. Dead bacteria are particulate protein. Vaccins are dead bacteria and do not grow in the body, and these vaccins are protein poison, and are not specific, nor is the tolerance obtained by protein substance specific. If the above deductions are anywhere near correct, then it is possible to assert that vaccins are not specific. This assertion is destructive to your autogenous vaccins. In the review of literature we note repeated observation from many sources where results have been obtained by the use of non-specific treatment for disease. As early as 1895 M. Matthes, writing in the *Deutsch. Arch. f. klin. Med.*, demonstrated a reaction by the hypodermic injection of an albumose which was typical of the tuberculin reaction. Rumpf treated a series of typhoid fever cases with a vaccin of *Bacillus pyocyaneus* and with favorable results. Von Wagner treated paretics with tuberculin, and M. Black, in 1915, in the *Wien. Klin. Woch'nsc.*, has reported a series of cases of early syphilis treated with tuberculin. Kraus, in the *Mönsch. Med. Woch'nsc.*, 1915, and J. L. Miller obtained equally as good results with other substances than vaccins, such as proteins and albumose; and Müller and Weiss, in *Wien. Klin. Wochnschr.*, 1916, obtained good results in treatment of gonorrheal arthritis with the injection of milk. Friedlander cured forty-odd cases of trachoma with the injection of milk.

This non-specificity may be noted by referring to reports from Culver, of Chicago; D. J. Davis, Thanner, Joblin, Peterson and Darier. The study of favorable results obtained by the use of different serums shows a non-specificity. To quote Darier, he says:

"Apart from the specific indications afforded by diphtheria, tetanus and hydrophobia, all the sera, viz: Deutschmann's serum, anti-staphylococcus serum, anti-pneumococcus, anti-streptococcus serum, have mani-

fested no true specific action. All of them may be said to act more or less efficiently. But none of them have shown the least superiority from the therapeutic standpoint over what we have termed para-specific serotherapy, which is an internal administration of the anti-diphtheric serum, which acts as a kind of 'opothérapie sérique de défense generale.' "

Rogman used several sera. We can remember the Schafer vaccin so dogmatically criticized because they were non-specific, though they did act efficiently at times. At the recent meeting of the State Medical Society, Dr. Herold, of Shreveport, cited the virtue of horse serum in pellagra. I carried out some investigation for Dr. Chas. Chassaignac some years ago where we used salvarsanized goat serum in the treatment of syphilis. The serum did not show a trace of salvarsan, and on the face of it seemed so unscientific that the investigation was unjustifiable. But the goat serum did possess a certain merit, and the results can now be accounted for. Might not this be an explanation for the action of the Swift-Ellis treatment in cerebro-spinal syphilis, and the investigation of Miller and Lusk, in typhoid fever, wherein all cases terminated by crisis after a single injection of albumose? He notes that his work was simply confirmatory of those already recorded. He treated acute, subacute and chronic arthritis, and reports favorably. Vaughn claims to have obtained a transitory immunity by the use of egg albumin.

Joblin and Peterson cite Wright as saying: "*All those who have had much experience with vaccin will have seen cases where therapeutic effects, lying quite outside the range of the particular vaccin employed, and therefore, as we thought, not quite creditable to science, have been obtained by vaccin-therapy.*"

This recitation of non-specificity may be carried on indefinitely, but what I desire to justify is the investigation of protein substances used parenterally as a curative means. I have been using milk intramuscularly injected and have obtained good results in certain eye affections, and, with a precedent, others might investigate the possibilities of a very attractive study. Many fear to rush in, but a review of Peterson and Joblin, Vaughn, Davis, Müeller, Thanner, Friedlander and many others will make it possible to follow their lead.

The unusually rapid therapeutic effect obtained by this injection of milk, the fever produced, the dosage, the standardization, sen-

itization, immunity and anaphylaxis, are all equally important in the study of protein therapeutics. If time permitted we could offer a reasonable hypothesis as to the action of these non-specific substances. They have a selective stimulation, they provoke a leucocytosis, hyperprexia, a mobilization of ferments and an increase in antiferments.

In selective stimulation we cite the recent paper of Becht and Lenckhart, who explain the source of antibodies in the hematopoietic organs. These protein substances act as a stimulant to these tissues, and they then flood the body with antibodies. Wright claimed that, after the injection of vaccin, he had a negative phase, but Bull asserts that this does not hold true. Dunklin finds that a marked increase in antibodies follows the intravenous injection of protoses.

I invite others to assist in an attractive and logical study. Permit the pendulum to swing. Get attached to a controlling body.

THE TREATMENT OF PERSISTENT GONORRHEAL INFECTION IN THE FEMALE URETHRA.^M

By MAURICE J. GELPI, A. B., M. D., New Orleans, La.

There are five areas in the female urogenital tract in which the gonococcus lodges and is likely to persist after the infection ceases to be acute. These five areas or zones are the vulvo-vaginal or Bartholin glands, the urethral or Skene's glands, the cervical glands, which, when occluded, form the so-called Nabothian cysts; the uterine cornua, and the Fallopian tubes. The kidney pelvis is rarely affected. During an acute fulminating attack it may be possible for the gonococcus to be present in all these areas simultaneously, including also the uterine fundus. As a result of this invasion by the gonococcus you may have the well-known chronic pathological conditions of vulvovaginitis, endocervicitis, metritis, salpingitis and urethritis, or more properly speaking, Skenitis. All these conditions usually receive proper attention as indicated, except the latter. As it is in the urethra, or rather in Skene's glands, that a persistent focus of infection is likely to be overlooked, it

* Read before the Orleans Parish Medical Society May 28, 1917.

seems worth while to call attention to a simple method of dealing with persistent infection in these glands.

Our attention is usually called to the presence of a chronic infection of Skene's glands by symptoms of urethral or bladder irritability. The symptoms appear in the form of discomfort, frequency or painful urination. Examination usually reveals the meatus more or less red, swollen and painful to touch, though in a long-standing infection the inflammatory reaction externally may be almost *nil*. On inspection of the anterior urethral wall there is usually seen either an elevated red spot corresponding to the infected gland, or simply a red macule resembling a flea-bite, and similar in appearance to the macule sometimes seen at the orifice of the duct of an infected vulvo-vaginal gland. On stripping the urethra it is usually possible to obtain a smear in which can be demonstrated the characteristic gram negative, intracellular diplococci. At times a solid plug of pus and bacteria can be squeezed out of a gland. In other instances the secretion is so profuse that the gonococcus can be demonstrated without even stripping the gland. I have seen such a condition, accompanied by a persistent gonorrheal cystitis which lasted for years after the original infection, and which could not be either symptomatically or bacteriologically cured until the destruction of Skene's glands had been effected. This is rather exceptionally the case, however, because the bladder infection usually subsides after a reasonable period of time, though unquestionably many of these cases complain of a persistent bladder irritability long after the bladder and urine are apparently normal and free from gonococci. In a certain number of these cases, at least, the irritability is not in the bladder *per se*, but the result of a persistent infection in Skene's glands. In other instances there are recurrent attacks of cystitis, which apparently are directly traceable to the persistent infection in the anterior urethra.

TREATMENT.—The treatment consists in the complete destruction of the diseased glands. This can be effected at times by means of 10 per cent silver nitrate, but the most efficient means is afforded by the actual cautery.

There can be but three essentials necessary for properly destroying the glands—a thoroughly good light, a thoroughly good exposure of the inside of the anterior urethra, and a reliable cautery of the proper variety. The ordinary operating electric headlight

suits the purpose very well, and can be attached to any lamp socket either in the office or in a home. Various urethral dilators and speculæ have been devised for the purpose of exposing the glands, but I have found most convenient for my purpose a self-retaining model which I had fashioned from a nasal speculum. The advantages of this instrument are that exposure is obtained with the least amount of traumatism and pain; that the labia are protected from the heat of the cautery, and that it remains in place, allowing the free use of both hands. An additional exposure can sometimes be obtained by elevating the anterior urethral wall by means of a retractor made from a bent hairpin. The cautery used is of the ordinary type, run by a motor, and the point consists of a fine, curved platinum wire.

With the patient in the dorsal position, the urethra is anesthetized by means of a pledget of cotton soaked in 10 per cent cocain or novocain. This is inserted in the anterior urethra and allowed to project so as to come in contact with and lie against the meatus. After five minutes the cotton is removed, the special speculum inserted and opened, and the orifice of the diseased gland can usually be detected. If the diseased gland is plainly visible it can be cauterized at once by simply touching it throughout its whole extent with the cautery. If some doubt exists as to its exact location and extent, the gland can be catheterized by means of a very small wire probe and the gland can be cauterized and destroyed, using the probe as a guide. Care should be exercised not to prolong the cauterization too long, so as not to burn the adjoining urethral mucosa, which might result in a stricture. It is better to make several repeated, short applications than a single long one. When the cauterization has been accomplished, the instruments are removed and the operation is complete. If at a subsequent examination it is found that the destruction of the gland has not been thoroughly effected, the same procedure is repeated.

This rather delicate, useful, effective procedure can be readily carried out in one's office with very little discomfort to the patient. It is offered here as a commonsense, ready means of combating an annoying condition which, if allowed to persist, might serve to mar an otherwise brilliant result in the treatment of a chronic gonorrheal infection.

WHAT TULANE HAS DONE FOR THE COUNTRY IN TIMES OF WAR.

Abstract from the Ivy Day Address, June 2, 1917,

By RUDOLPH MATAS, M. D., LL. D., F. A. C. S., New Orleans, La.

It is now a little over one year since the American Red Cross began to organize and to equip complete base hospital units and laid the foundation for twelve different activities which, under the general designation of Red Cross Units, offers any active, capable physician and every trained nurse ample opportunity for service. Thirty-six base hospital units have now been organized under the auspices of the American Red Cross. I am happy at the thought that Base Hospital Unit No. 24 is to be known and recognized as the Tulane Unit, with the Medical School of Tulane as its parent institution.

The professional personnel of this unit is constituted of the members of your Faculty and some of its distinguished alumni, who have volunteered for service from our neighboring States. The medical, surgical and laboratory sections are manned by some of your leading and most active teachers, who have pledged themselves to serve in the unit in foreign fields and who are now impatiently awaiting their commission to proceed to France. The nurses and their aids are, for the greater part, New Orleans women, alumnae of the New Orleans schools of nursing, including the Touro Infirmary, Charity Hospital, Hotel Dieu and Presbyterian Hospital. The hospital and professional equipment, amounting to \$25,000, exclusive of \$4,500 worth of supplies (in all, about \$30,000), have been contributed by the people of New Orleans under the patriotic leadership and inspiring propaganda of the New Orleans Chapter of the American Red Cross. This is the first and only base hospital unit, caring for 500 beds, that has been organized and equipped in the South—the only unit, in fact, south of Baltimore.

As originally conceived, it had been planned that the administrative and civilian personnel, amounting to over 160 enlisted persons, should have been supplied by the student body of the Tulane School of Medicine in all its grades, thus, practically, mobilizing the whole School of Medicine—students and Faculty.

When this suggestion was first acted upon the response of the student body was immediate and magnificent. As acting director of the unit, I now avail myself of this opportunity to express my

grateful thanks to, and my admiration of, the student body, for the immediate, unhesitating and spontaneous response to the call for service that followed the posting of the notices for enlistment in the unit. Fortunately for the class and for the school, but perhaps unfortunately for the unit, the plan which had been so well conceived on the basis of the present Italian teaching hospital units was soon destined to collapse, in consequence of the determination of the Council of National Defense, which, early in April, 1917, decided that medical as well as other students duly matriculated in schools, universities and other educational institutions should not be conscripted into service. After the nearly fatal experience of England, we can realize that this resolution was wise and most timely, and that the best and most practical service the student can render his country is to remain on the benches in the classroom, with the view of perfecting his knowledge so that he may render his country the greater service in his special province.

Apart, therefore, from the administrative personnel, which is to be otherwise enlisted in New Orleans, the unit is to be directed and officered by Tulane teachers and Tulane graduates. This will be the first collective contribution which the Tulane Unit will make to the war. I feel confident in announcing the list of the professional personnel, as it is now organized and ready for service with the army abroad, that the people of New Orleans will feel that their contribution to this worthy and generous cause will have been well invested and they will know that their trust and faith in the loyalty and patriotism of Tulane have not been misplaced.

PRESENT STATUS OF THE PROFESSIONAL PERSONNEL, BASE
HOSPITAL, UNIT No. 24, MEDICAL SCHOOL OF
TULANE UNIVERSITY.

Majors.

1. Rudolph Matas, F. A. C. S., Professor of Surgery, Tulane University, organizer and Acting Director (May 7, 1916-June 7, 1917).
2. John B. Elliott, Jr., Professor of Internal Medicine, Tulane University, Director and Chief of the Medical Section (June 7, 1917).
3. Urban Maes, F. A. C. S., Assistant Professor of Clinical and Operative Surgery, Tulane University, Assistant Director of Surgical Section and Chief of Operating Staff.

Captains.

1. John Smyth, F. A. C. S., Professor of Clinical Surgery, Tulane University, Staff Surgeon.
2. Erasmus D. Fenner, F. A. C. S., Professor of Orthopedics, Tulane University, Staff Surgeon (in charge of orthopedics).

3. Joseph Hume, Professor of Genito-Urinary and Venereal Diseases, Tulane University, Staff Surgeon (in charge of genito-urinary and venereal cases).

4. Charles T. Chamberlain (M. D., Tulane), surgeon in charge of infirmary, Natchez, Miss, Staff Surgeon.

5. S. Paul Klotz (A. B., M. D., Tulane), graduate Army Medical School, Washington, D. C., class 1910, Staff Surgeon.

6. John T. Halsey, Professor of Therapeutics and Clinical Medicine, Tulane University, Staff Physician (Acting Adjutant).

7. Joseph D. Weis, Professor of Tropical and Clinical Medicine, Tulane University, Staff Physician.

8. Isaac I. Lemann, Professor of Clinical Medicine, Tulane University, Staff Physician (Acting Quartermaster).

9. Chaillé Jamison, Assistant Professor of Clinical Medicine in Clinical Laboratory; Tulane University, Staff Physician.

10. John A. Lanford, Assistant Professor of Pathology, Tulane University; Pathologist, Touro Infirmary Assistant Director (in charge of laboratories).

Lieutenants.

1. Charles A. Bahn, Clinical Assistant, Ophthalmology, Tulane University, Secretary Orleans Parish Medical Society, Oculist.

2. Harold S. Kearney (M. D., Tulane), Clinical Assistant, Ear, Nose and Throat, Tulane Infirmary, Specialist (in charge of ear, nose and throat cases).

3. S. King Rand (M. D., Tulane), former Assistant, Pathological University of Wisconsin; Pathologist, Private Infirmary, Alexandria, La., Assistant Pathologist and Bacteriologist.

4. Paul G. Lacroix, Clinical Instructor, Minor Surgery, Tulane University, Assistant Staff Surgeon (ward surgeon).

5. Alexander Ficklen (M. D., Tulane), Junior Surgeon, Touro Infirmary, Assistant Staff Surgeon (ward surgeon).

6. Muir Bradburn, Assistant Demonstrator, Operative Surgery, Tulane University, Assistant Staff Surgeon (ward surgeon).

7. John F. Dicks, Instructor, Gynecology, Tulane University, Assistant Staff Surgeon (ward surgeon).

8. Charles K. Wall (M. D., Tulane), Senior Resident Staff, Touro Infirmary, Assistant Surgeon (ward surgeon).

9. E. R. Bowie (M. D., Tulane), Resident Staff, Touro Infirmary; Assistant Radiologic Laboratory, Radiologist.

10. Dentist (under consideration).

11. Oscar Joseph Trappey, Demonstrator, Operative Dentistry, School of Dentistry, Tulane University, Dentist.

12. Neurologist (under consideration).

While this is the first body of Tulanians who have been commissioned and enlisted for service in this war, it is with pleasure that I recall the fact that several of our graduates have already been called and are on their way to the front to serve as medical men with the colors in military capacities.

One of our graduates, Dr. M. P. Lane, served in the last Serbian campaign with the first American Red Cross Unit, contracting

typhus fever, from which he recovered. He did splendid work near Belgrade, and since the return of the unit, after the suppression of the typhus epidemic, he again enlisted with the Canadian forces and is now at the front in France. One of the former and most popular instructors in the laboratory of pathology, Dr. F. B. Gurd, enlisted as an officer in the Canadian contingent and, after rendering brilliant service in Salonika and the Mediterranean, is now engaged with the Canadians in their heroic work on the Arras front. Dr. R. E. Graham, another of our recent graduates, after completing his course of instruction at the Army Medical School, has been sent, with eleven of his classmates, to serve in France with an army corps now about to embark for Europe. Captain T. C. Austin, of the Army Medical Corps (Tulane, class of 1909), who was so recently with us as the first military instructor appointed by the Surgeon General to lecture on this branch, has also gone to the front as Military Director of the St. Louis Base Hospital Unit.

There are many others serving as commissioned officers in various capacities in the foreign service of the government, but whose present addresses have not reached me. These all constitute the first line of scientific skirmishers who have preceded the greater body of our alumni, whom we are confident will rally round the banner of Tulane, upholding its best traditions for patriotic service and efficiency.

In connection with the Medical School of Tulane we can well afford to mention with legitimate pride its long line of loyal and patriotic deeds. During the eighty-three years of its existence the Medical School of Tulane University of Louisiana has never failed, through its Faculty and Alumni (who now number nearly 4,900), to respond to the call of duty and service in time of war. On May 3, 1898, the Dean of the Medical Department, Dr. Stanford E. Chaillé, of honored memory, in his official report at the commencement exercises, alluded to the Spanish-American War in the following terms:

“This college has survived and still progresses, in spite of numerous financial panics, of eleven yellow fever and also eleven cholera epidemics, and of two great wars (the Mexican War of 1846 and the Civil War of 1860-64). A third war is now in progress; even if it should be connected with some other public misfortune, it will find at its close the Medical Department of Tulane University (the oldest and foremost medical college of the great Southwest) still pursuing its onward career, still striving to relieve all who suffer—whether friends or foes—from the woes of disease and premature death.”

In 1898, as in 1861, the call to arms found a prompt echo in the brave hearts of the patriotic sons of our Medical Department, and "grim-visaged war" again tested the valor of our students and graduates.

"In 1861 our students numbered 404. The war began, and left us in 1862 with but 94—a sufficient indication of the patriotism of our students. Six years after the war, information was procured of only 427 of our graduates; of these, 240 had served in the Confederate Army; 19 were killed, 3 died of wounds, 5 were permanently disabled by wounds received in action, 16 'died in service'—some of disease, some in prison. To this fraction of the ghastly truth, it may be added that in 1875 all of our professors had been, and to-day a **majority** of them were, officers in the Confederate Army. This roll of honor is probably unsurpassed by any medical college."

The Spanish-American war made comparatively little demand upon the patriotic ardor and martial capacity of our country, yet it was sufficient to justify the belief that no medical college can surpass, if equal, our own in the number of graduates who entered military service, and who won distinction for themselves and for their Alma Mater. At least 54 of our graduates (51 of whom were medical officers) and 13 of our undergraduates served during this war. There were probably more of whom no information was obtained at the school. The records of the war show that many of these rendered distinguished service and gained the enviable distinction of special commendation from the highest official sources.

In 1898 there were 125,000 doctors and 120 regular medical colleges in the United States. The Surgeon General of the United States Army appointed from these States about 650 so-called "contract surgeons," thirty of whom were our graduates. There were twenty "contract surgeons" at the battles around Santiago; seven of these our graduates.

The military and medical conditions under which the United States has entered the present war differ vitally from those of 1898. Our geographical relation to the seat of war is very different, but we may rest assured that the graduates of the Medical School are not "slackers" and will not be found wanting and that they will sustain the most worthy, the noblest traditions of their predecessors.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

Edited by DR. L. R. DE BUYS, Secretary-Treasurer.

OUR DUTY.

Louisiana has done her share in our present crisis, both in the registration of her eligible young men for the army and the subscription to the Liberty Bond issue to finance the war. There is another call now being made in which an opportunity is given the medical men of the State to show, by their support, their endorsement of the attitude of this country in its efforts for a lasting world's peace.

The Louisiana State Medical Society is glad to see, in the applications of physicians for the Medical Officers' Reserve Corps, that its members are those who are offering their services, and that in only a few instances are the applicants physicians who are not members of organized medicine, clearly showing that our State Society is composed of the most loyal doctors in the State, who keenly feel their sense of duty.

It should be remembered that there is a well-defined duty to be performed by every medical man in the State, whether he goes to the front or remains at home. The former will, in his spirit of patriotism, make many sacrifices, one of which will be to leave his practice, in the majority of instances, for a salary much less remunerative. The latter, because of responsibilities and duties, will be deprived of serving his country at the front, but his contribution to the cause may be just as great if he pledges himself to conserve the practice of the former, and thereby make the absentee's financial sacrifice less. By the proper care in this regard the physician, upon his return, can find his practice awaiting him.

Our entire membership in this crisis, even though slight differences may exist between some of us, should pledge itself to support, respect and conserve the rights of those self-sacrificing members who go to the front.

Each Parish Society should pass suitable resolutions to this effect, and each member should consider himself specially delegated to see that the resolutions adopted are strictly enforced.

There are two ways by which a physician may continue his prac-

tice during his absence: (1) by leaving it to a designated physician, or (2) by requesting his Parish Society to act as custodian. By the custodianship being vested in the Parish Society, it is probable that the individual interests would be better conserved, as, for example, should a certain patient not care to consult a specified physician, but prefer to see another, this other physician would be responsible to the Society. There would be no objection, however, to the absentee specifying a physician to do the major part of his work.

The proper adjustment of fees could be agreed upon by the physician or by the Parish Society if it is to be the custodian; as, for example, a certain proportion for the absentee, another proportion for the physician doing the work, and, in the event the Parish Society is the custodian, a certain percentage for the Society to defray the expenses incident to the necessary bookkeeping.

The plan is a simple one, but because of a lack of space it cannot be gone into as completely as is possible. It should be borne in mind, however, that there may be local conditions existing which would require especial consideration.

The physician intending to absent himself should send a card to his clientele conveying whatever information he may deem necessary, and upon which should appear the resolution adopted by his Parish Society. He should also send a card to his fellow-practitioners for their information, so there could be no excuse upon the plea of lack of notification.

All of this should be done through medical organization and the responsibility placed with the Parish Society.

Doctor, remember before leaving for the front, what medical organization has meant to you and what it can now do for you. Remember the standing and prestige that goes with it in the eyes of the Government. Do not, therefore, allow your absence in any way to interfere with your membership, but continue your good standing, without lapse of benefits, which is more valuable now than ever.

Remember your country, State and National Societies are proud of you and are watching your every action and expecting much of you. Remember, when the time comes, when you shall be honored, that it will be mighty good for you to feel that your standing in organized medicine is what it should be. And, finally, remember

whatever honor you may be to your country will be magnified tremendously in your home Parish and State Societies, particularly if it can be said that you are one of them. Therefore, doctor, do not permit your membership to lapse when you go to the front, and, God bless you!

The Secretary's office is anxious to keep in touch with each member of the Society who is in the service and will be glad to hear frequently from him, so as to keep our membership informed through the pages of the JOURNAL as to what he is doing. Also to inform him of what is going on at home. Do not, therefore, permit your absence from your home State to sever your home ties.

PROCEEDINGS OF THE AMERICAN SOCIETY OF TROPICAL MEDICINE

FOURTEENTH ANNUAL MEETING, NEW YORK CITY,

June 4-5, 1917.

At 2 o'clock p. m. on Monday, June 4, the President, Dr. B. K. Ashford, with Dr. H. R. Carter and Dr. Isadore Dyer, met at the Margaret Fahnestock Training School of the New York Post-graduate School. At 2:30 p. m., as no other officers or members were present, the gathering adjourned to 2 o'clock p. m., Tuesday, June 5.

On June 5 the meeting was called to order at 2:15 p. m., the President, Dr. Bailey K. Ashford, in the chair, and with the following other members and guests present: Drs. H. R. Carter, Victor G. Heiser and W. C. Rucker, of the U. S. P. H. S.; Drs. Damaso Rivas, Philadelphia; W. S. Rankin, North Carolina; Ernest L. Walker, San Francisco; G. C. Elder, U. S. Navy; Maurice C. Hall, Detroit, Mich.; T. W. Jackson, Harrisburg, Pa.; Isadore Dyer, New Orleans, and a few others whose names were not given.

In the absence of the Secretary (Dr. John M. Swan, of Rochester, N. Y.), the Chair appointed Dr. Dyer Acting Secretary.

PRESIDENT'S ADDRESS.

Col. Bailey K. Ashford (Medical Corps, U. S. Army), the President, then addressed the meeting upon "*The Relation of Laboratory Men to the Practice of Medicine in Tropical Countries.*" (Paper delivered to Secretary.)

The reports of the Secretary and Treasurer were not presented.

Dr. H. R. Carter (U. S. P. H. S.) excused the absence of his paper for reasons acceptable to the meeting.

Dr. Victor G. Heiser (U. S. P. H. S.) requested that his paper on "*Soil Pollution in the United States and Eastern Countries*" be read by title for publication in the proceedings of the Society.

The following report of the Council was presented and, upon motion duly seconded, was adopted without amendment:

The Council met at the Hotel Astor at 10 a. m. June 5, with President Bailey K. Ashford and Councilors W. C. Ruecker and Isadore Dyer present. In the absence of the Secretary (Dr. J. M. Swan), Dr. Dyer acted as Secretary. The Council considered the nominations for membership proposed at the meeting in 1916, and recommended that they be elected by the Society.

It was voted to recommend to the Society that a committee, with power to act, be appointed to consider the publication of a separate Bulletin of the Society Proceedings and Transactions. In the event no immediate plan for such publication can be arranged, the committee be instructed and authorized to continue the arrangement with the **New Orleans Medical and Surgical Journal** for the coming year upon the same terms and conditions as for the past year; further, in the event of the latter arrangement, the committee is to be continued, with a view to a complete report at the meeting of 1918.

The Council again recommends the adoption of the amendment to Article III of the By-Laws, as follows:

We, the undersigned, move that Article III of the By-Laws of the American Society of Tropical Medicine be amended by striking out the words "The President and the Secretary shall be *ex-officio* members of the Council." By striking out the words, "In 1905 three Councilors shall be elected for two years and two Councilors for one year. Thereafter each Councilor shall be elected for two years," and substituting the words, "In 1917 one Councilor shall be elected to serve one year, and one to serve two years. In 1918 one Councilor shall be elected to serve three years, one to serve four years and one to serve five years. Thereafter each Councilor shall be elected to serve five years," so that the article shall read as follows:

"ARTICLE III. The officers shall consist of a President, two Vice-Presidents, a Secretary, an Assistant Secretary, a Treasurer, and a Council of five members. They shall perform the customary duties of such officers.

"The Council shall have general supervision of the affairs of the Society, and shall meet from time to time as they determine. The officers shall be *ex-officio* members of the Council. In 1917 one Councilor shall be elected to serve one year and one to serve two years. In 1918 one Councilor shall be elected to serve three years, one to serve four years and one to serve five years. Thereafter each Councilor shall be elected to serve five years.

"In case of death or resignation of any officer or Councilor of the Society, the Council shall be empowered to fill such vacancy until the next annual meeting."

(Signed) THOMAS H. FENTON.
ISADORE DYER.
JOHN M. SWAN.
M. J. ROSENAU.

The Council presents the following nominations for officers and Councillors:

President—C. C. Bass, New Orleans.

First Vice-President—H. J. Nichols, U. S. Army.

Second Vice-President—Karl F. Meyer, San Francisco.

Secretary and Treasurer—John M. Swan, Rochester, N. Y.

Assistant Secretary—Allen J. Smith, Philadelphia.

Councillors (holding over since 1916)—W. P. Chamberlain, U. S. Army; P. E. Garrison; W. C. Rucker, U. S. P. H. S. 1917-18—J. B. Elliott, Jr., New Orleans. 1917-19—G. W. Coy, U. S. P. H. S.

For the Council:

B. K. ASHFORD,

W. C. RUCKER,

ISADORE DYER.

The President took the floor and spoke on the question of new members, urging particularly a close relationship with the Americas to the south of the United States. It was voted to appoint a committee to further the new membership, and, upon resuming the chair, the President named Dr. Damaso Rivas, Dr. H. R. Carter and Dr. Ernest L. Walker as the committee.

Drs. Isadore Dyer, W. C. Rucker and V. G. Heiser were named by the President as the Committee on the Bulletin.

Dr. Dyer moved that nominations received within the next sixty days be considered as presented at this meeting. (Carried.)

Dr. W. C. Rucker moved that the Treasurer be authorized to pay expenses of the Committee on New Membership, not to exceed "\$10 per month." (Carried.)

Dr. Damaso Rivas, of Philadelphia, then read a paper on "*The Diagnosis, Treatment and Prophylaxis of Malaria as Carried Out in the Sanitation of Brioni, Istrie (Austria) in 1899-1902.*" (Discussed by Drs. Carter, Heiser, Williams and Jackson.) (Paper not furnished Secretary.)

Dr. Ernest L. Walker (San Francisco) read a paper on "*Leishmaniasis and Pseudo-leishmaniasis in the Amazon Basin.*" (Discussed by Drs. Heiser, Rivas and Carter.) (Paper delivered to Secretary.)

Dr. Damaso Rivas (Philadelphia) summarized a paper on "*The Consequence of the European War From the Medical Point of View.*" (Paper not delivered to Secretary.)

On motion, the following papers were read by title:

Psychoses Infectieuses Surtout Dans Les Maladies Tropicales.
Prof. A. Austregesilo, Rio de Janeiro.

Mycetoma and Pseudo-mycetomatous Formations in the Anglo-Egyptian Sudan. Albert J. Chalmers and R. G. Archibald, Khartoum.

Notes on a Series of 1561 Cases of Cholera Treated Without Potassium Permanganas. N. H. Choksy, Bombay, India.

L'Infestation de L'ankylostomiase Par la Peau. Prof. A. Austregesilo, Rio de Janeiro.

Blister Beetles as a Public Nuisance. Albert J. Chalmers and Harold H. King, Khartoum.

Concerning the Intermediate Host of Schistosomum Mansoni.
Dr. Iturbe Paracas, Venezuela.

Contribuicao as Estudo das Verminoses Intestinoes no Bahia.
Dr. Octavio Torres, Bahia.

Adenomycose, by Dr. Ezequiel C. Diaz, Belle Horizonte.

Some Observations on the Dysenteric Endamæbæ, by Dr. Henrique de Beaurepaire Aragao.

Notes on Granuloma Venereum, by Dr. Henrique de Beaurepaire Aragao.

Suprarenal Syndrome in Paludism, by Dr. Clementino Fraga, Bahia.

Beri-Beri no Brazil, by Dr. Clementino Fraga, Bahia.

There being no further business, the meeting adjourned.

ISADORE DYER,

Acting Secretary

June 5, 1917.

NEWS AND COMMENT

THE AMERICAN ASSOCIATION FOR THE CONTROL OF SYPHILIS was organized in Cincinnati, May 23, with a charter membership of twenty-nine. The promulgation of the knowledge of syphilis among medical men and institutions is the object of the association. Other phases of the subject will gradually be developed, such as the social and economic sides of the question. The following officers were elected: President, Dr. Martin F. Engman, St. Louis; vice-president, J. F. Schamberg, Philadelphia, and secretary-treasurer, Dr. Harry E. Kleinschmidt, St. Louis.

THE AMERICAN DERMATOLOGISTS' ASSOCIATION held its meeting in Cincinnati, May 24-26. Dr. Abner Post, Boston, was elected president, and Dr. Oliver S. Ormsby, Chicago, was re-elected secretary-treasurer. Philadelphia was selected as the next meeting place.

HOSPITAL FOR CRIPPLES.—A tri-state hospital school in Memphis, for the crippled children of Arkansas, Mississippi and Tennessee, has been established by the "Circle of Good Deeds of King's Daughters of Memphis." The hospital will begin with forty beds, and the purpose of the institution is to develop the minds of the children while their bodies are receiving the care of an orthopedic surgeon.

MEETING OF THE MEDICAL MILK COMMISSION.—The eleventh annual meeting of the American Association of Medical Milk Commissions was held at Brooklyn, June 1-2 and 4, Dr. Walter D. Ludlum, Brooklyn, presiding. The National Certified Milk Contest was conducted, for which three silver cups were awarded. A memorial service to Dr. Henry L. Coit, the father of certified milk, was held on the afternoon of June 2 at Fairfield, N. J.

GIFTS TO JOHNS HOPKINS.—The School of Hygiene and Public Health, Johns Hopkins University, has recently been given \$70,000 for maintenance by the Rockefeller Foundation, and a gift of \$350,000 from the General Educational Board in New York has been made to the medical school of that institution. The latter gift is to be divided between the laboratory department, which is to receive \$250,000, and the department of pediatrics, which receives the remaining \$100,000, to be used for the support of the Harriet Lane Home for Children.

CANCER PROPHYLAXIS IN PORTO RICO.—A propaganda committee, affiliated with the Cancer Commission of the United States, has been appointed in Porto Rico to educate the public in the prophylaxis of malignant disease. The committee consists of Dr. J. G. Brioso, chairman, with six physicians.

SMALLPOX IN SEVENTY UNITED STATES CITIES.—According to *Public Health Reports* for May 11, 1917, there were reported from seventy cities in the United States 1,157 cases of smallpox during five weeks ending April 27, 1917. Minneapolis and Austin, Texas, had the highest number, there being 154 cases in the former city and 76 in the latter. Austin was the only city having the virulent type, it is said.

TYPHOID IN CANADA.—Orillia, Ont., has recently suffered an

outbreak of typhoid fever, due, it is thought, to the failure of that town to Pasteurize its milk supply. The disease has been prevalent in Quebec and a number of cases have occurred in Montreal, Sherbrooke, St. Johns, Farnham, St. Hyacinthe, Sorel and Levis.

MISSISSIPPI CHARITY HOSPITAL REOPENS.—The Matty Hersee Charity Hospital, Meridian, Miss., which was closed March 6 on account of lack of funds, was reopened April 1, as the result of public subscription. The institution's State appropriation of \$11,000 is still unavailable. A new charity hospital for South Mississippi has been started at Laurel, and it is expected that the institution will be ready in September.

THE WHITNEY MARRIAGE BILL, which requires that those who apply for marriage license in New York State shall present affidavits that they are free from communicable diseases, has become a law. The affidavits filed must contain sworn statements that the affiant has never had venereal disease, or that laboratory tests show that such diseases are not now present.

THE AMERICAN THEATRICAL HOSPITAL has recently been opened in Chicago, where sick and indigent people of the stage and other branches of the amusement field may be cared for.

MEETING OF THE NATIONAL TUBERCULOSIS ASSOCIATION.—At the recent annual meeting of the National Association for the Study and Prevention of Tuberculosis a strong protest was made against the United States Government assisting patent medicine concerns in this country to exploit China and the Chinese people.

Resolutions were adopted pledging the support of the Association to the American Red Cross in promoting Red Cross work in any form. Public health nurses, however, were urged to continue in their present field of activity, as their special training in tuberculosis and other public health work is particularly needed at this time to combat disease and social problems created by the war.

National prohibition for both soldiers and civilians during the war period and one year thereafter was advocated.

Col. Theodore Roosevelt and Sir William Osler were elected honorary vice-presidents; president, Dr. Charles L. Minor, Asheville, N. C.; vice-presidents, Dr. Frederick L. Hoffman, Newark, N. J., and Dr. David R. Lyman, Wallingford, Conn.; secretary, Dr. Hy. Barton Jacobs, Baltimore; treasurer, Dr. William M. Baldwin, Washington, D. C.

ST. LUKE'S HOSPITAL, New York, has opened a new ward of

thirty beds for the free treatment of men rejected from military enlistment for minor and remedial physical defects. This service will be maintained during the war, at an estimated cost of about \$2,000 a month.

GIFT TO YALE.—Mrs. E. H. Harriman, of New York, has recently presented a sum of money to Yale University for the purpose of establishing the Harriman Fund for Orthopedics. The fund, yielding an income of \$4,600 a year, will provide for a professor of orthopedics in the Medical School.

THE UNITED STATES CIVIL SERVICE COMMISSION announces two open competitive examinations, to take place July 10 and 11, in the various cities in the United States. The first is to fill present and future vacancies in the positions of physician in the Indian and Panama Canal Services, acting assistant surgeon in the Public Health Service, surgeon and assistant surgeon in the Coast and Geodetic Survey, and is for men only. The second is for anatomist in the Army Medical Museum, Surgeon-General's office, Washington, D. C., for both men and women, at a salary of \$1,600 a year. For further information apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C. For this section, apply to the Secretary of the United States Civil Service Board, Custom House, New Orleans.

MAYO FOUNDATION ESTABLISHES NEW FELLOWSHIPS.—The Mayo Foundation for Medical Education and Research (in affiliation with the University of Minnesota) has established assistantships and fellowships in the Section of Dermatology and Syphilology of the Mayo Clinic.

THE NEW WORKMAN'S COMPENSATION ACT.—The attention of the profession has been called to the changes in the Workmen's Compensation Act, as amended at the recent session of the General Assembly and which went into effect on June 1, 1917. The employee now has "the right to select the physician by whom, or the hospital in which, he desires to be treated," and "the employer shall furnish reasonable medical and hospital services and medicines when they are needed" for four weeks, instead of two, as formerly. Another point, which has not been brought sufficiently to the attention of the profession, is the following clause: "The physician or hospital shall give written notice to the employer within seven days after the beginning of their services that they have been so selected, and shall present their claim to the employer for the pay-

ment of such services within three months after the conclusion thereof, but the failure of the employer to receive such notice shall not render the employee liable for such service."

THE OSLER TESTIMONIAL FUND.—The Medical and Chirurgical Faculty of Maryland has created a fund of \$10,000, to be known as the Osler Testimonial Fund, the income of which is to be used for the purchase of books for the faculty library and for the upkeep of the hall which bears Sir William Osler's name.

NEW ORLEANS DISPENSARY FOR WOMEN AND CHILDREN.—The annual meeting of this institution was held recently, and reports show good work accomplished during the year and splendid results obtained. There were 12,830 cases treated during the year and 419 operations performed; 13 deaths, 9 adults and 4 children; 3,349 prescriptions were filled, and 5,382 were filled free through the Sickles Fund.

The money receipts of the year were very great, owing to two large donations—an anonymous gift of \$4,500 and the \$3,000 given by Frank B. Williams for the nurses' home.

Dr. Linda Coleman, the first woman doctor to receive a degree from Tulane Medical School, was admitted as an intern in the Dispensary.

The same officers were re-elected to serve another year, as follows: President, Miss Florence Dymond; vice-president Mrs. Henry Robinson; corresponding secretary, Mrs. John Clegg; recording secretary, Mrs. James Day; treasurer, Dr. Sara T. Mayo.

THE ANNUAL COMMENCEMENT OF THE TULANE COLLEGE OF MEDICINE took place on June 6, 1917, at the French Opera House. The president of the University, Dr. Robert Sharp, conferred degrees on the following:

Doctor of Medicine: Ernest Emile Allgeyer, William Edward Barker, Jr., Charles Wesley Barrier, Jr., Francis Theophile Beatrous, Miss Linda Hill Coleman, Richard Smith Crichlow, George Joseph de Reyna, Jr., William Russell Eidson, Morgan Shell Evans, Winfield Newton Floyd, Henry Leroy Franklin, Valentine Henry Fuchs, Idys Mims Gage, Tracey Thomas Gately, Edmund Chaillé Hancock, Eugene Darius Hardin, Franklyn Albert Howell, Emmett Lee Irwin, John Joseph Irwin, John Paul Jones, Jr., Waldo Austin Knolle, Lucien Amaron Ledoux, Walter Edmond Levy, Samuel Benson Lyons, Thomas Randolph McCarley, Ernest Monroe McKenzie, Olin Glaze McKenzie, John Campbell McSween, Jr., George Alfred Mayer, Anthony Manuel Menendez, Joseph Charles Menendez, Francis Albert Meyer, John Ralph Morgan, Leon Wencelslau Nowierski, Mercer Cranor Parrott, José Antonio Pérez, George Allen Ramsey, Richard Brandon Rankin, Wirt Adams Rodgers, Manuel Daniel Rojas-Delgado, Jonas William Rosenthal, Walter Clifton Royals, Charles Henry

Savage, Wallace Otto Schutzmann, Daniel Nathan Silverman, John Milton Singleton, Jr., Jack Sidney Stell, Frank Samuel Tarleton, Alexander Green Touchstone, Samuel Sellers Underwood, Rawlin Robert Ward, John Walter Willis.

Graduates in Pharmacy: Adriano Báster-Font, Miss Carmela Batista-Font, Stinson Killgore Heard, Edward Joseph Scallan, Emory Ellison Walker.

Doctor of Public Health: Claude Percival Fryer.

Doctor of Dental Surgery: Alney Austin, Anthony Bacigalupi, Dario Ballina Clemente, Edgar Wilmot Hungate, Felix Morris Isaacson, Pierre Olias Landry, William David McArthur, Levi Holt Magee, David Miles Prowell, Robert Rubinstein, Russell Albert Thompson.

The Graduate School of Medicine (New Orleans Polyclinic) reported 244 matriculates from twenty-six States and three foreign countries.

PERSONALS.—Dr. Charles McVea, president of the Louisiana State University, has been appointed surgeon of the University, to succeed Dr. R. C. Kemp.

REMOVALS.—Dr. J. L. DuBose, from Jacksonville, to Wells, Texas.

Dr. J. D. Hartzo, from Bivins to Atlanta, Texas.

MARRIED.—On June 2, 1917, Dr. John Galbraith Pratt to Miss Eleanor Luzenberg, both of this city.

On June 27, 1917, Dr. William Stewart Hamilton to Miss Lillian Stokes Rhodes, both of Mississippi.

DIED.—On May 29, 1917, Dr. Joseph Stein, a practitioner of New Orleans for forty-two years, aged 68 years.

BOOK REVIEWS AND NOTICES

All new publications sent to the JOURNAL will be appreciated and will invariably be promptly acknowledged under the heading of "Publications Received." While it will be the aim of the JOURNAL to review as many of the works accepted as possible, the editors will be guided by the space available and the merit of respective publications. The acceptance of a book implies no obligation to review.

A Text-Book of General Bacteriology, by Edwin O. Jordan, Ph. D. Fifth edition, thoroughly revised. Octavo of 669 pages, fully illustrated, W. B. Saunders Company, Philadelphia and London.

This text on Bacteriology needs no further introduction to the medical profession, as it has been most highly recommended by the leading medical colleges of the United States since the first edition.

The new edition contains only eighteen more pages of reading matter than the former one, and the illustrations are the same. The text is not re-written, and only in a few places is it changed, and these changes are where new discoveries have been made and new work is shown to advantage.

Among the additions is the "Method for Testing and Standardizing Disinfectants" as devised by Anderson and McClintic and is copied from the bulletin issued by the Hygienic Laboratory of the Public Health Service of the United States. Another interesting addition is the "Bacteriological Standardization of Water" and the method of determining the same. This is also taken from a bulletin issued by the United States Public Health Service.

The author seems to have accepted the work of Plotz and others as proof that the etiologic factor in typhus fever has been cultured, and devotes an entire chapter to the subject. He also has included whooping cough in the diseases of known etiology.

The bibliography of the book is excellent, making it a valuable aid to the writer on bacteriological subjects and as a reference book.

John A. Lanford

Traumatic Surgery, by J. J. Moorhead, M. D. W. B. Saunders Company, Philadelphia and London.

In the preface the author states that his purpose is to place in one volume the information necessary for diagnosis and treatment of all of the usual and most of the unusual forms of injuries.

After reading the book thoroughly we are impressed with the idea that, while the object is a worthy one, the undertaking was too great a work for one volume. If intended for students, the book is too much of a compend to be of value, and if the book was written for practitioners its value as a reference work is spoilt by so many empiric statements.

In the chapter on wounds the author emphasizes the danger of scrubbing the wound and the advantage of the immediate use of iodine. The chapter on shock is too short, and the cause of this condition given, as that contained in Crile's original exhaustion and inhibition theory.

In the chapter on dislocation the writer makes a most remarkable statement, the truth of which may be difficult to prove by any scientific means: "Chloroform should never be used for this purpose" (reduction of dislocation), "because a dislocation or fractured bone seems to lose resistance to the drug, even as pregnancy confers an immunity upon it" (page 165).

On page 167 the writer states, under the heading of "Dislocation of the Lower Jaw": "Variety: Forward unilateral, the commonest form." A little further he says: "Bilateral forms are very rare." This is absolutely at variance with such authors as Stimson, Preston and Cotton. Stimson, quoting Malgaigne, gives the proportion of bilateral and unilateral as five to two. On page 170 the wrong legend appears under figures 140-142. In the chapter on fractures we notice that the repair of fractures is given in the old stereotyped way.

We might easily take exception to the treatment advised for burns. The author advises iodine one-half strength. Picric acid, two per cent, he mentions only to condemn its use. The established use of picric acid in the treatment of burns should need no defense.

Artificial respiration is inadequately taken up; the Schaffer method is "indicated by diagrams" only.

The use of many of the Murphy Clinic illustrations help to make the book attractive.

Isidore Cohn.

PUBLICATIONS RECEIVED

LEA & FEBIGER, Philadelphia and New York, 1917.

Diseases of Children, by George M. Tuttle, M. D., and Phelps G. Hurford, M. D. Third edition, thoroughly revised and enlarged.

Eye, Ear, Nose and Throat, by Howard Charles Ballenger, M. D., and A. G. Wippern, M. D. New second edition, thoroughly revised.

P. BLAKISTON'S SON & CO., Philadelphia, 1917.

Acute Poliomyelitis, by George Draper, M. D., with a foreword by Simon Flexner.

Potter's Compend of Materia Medica, Therapeutics and Prescription Writing. Based on the ninth revision of the U. S. Pharmacopœia, including many unofficial remedies. By A. D. Bush, B. S., M. D. Eighth edition, revised.

W. B. SAUNDERS COMPANY, Philadelphia and London, 1917.

The Surgical Clinics of Chicago. April, 1917. Vol. 1, No. 2.

The Medical Clinics of Chicago. May, 1917. Vol. 2, No. 6. Index number.

WM. WOOD & CO., New York, 1917.

Diseases of the Stomach, by Max Einhorn, M. D. Sixth revised and enlarged edition.

G. P. PUTNAM'S SONS, New York and London, 1917 (The Knickerbocker Press).

The Adventure of Death, by Robert W. Mackenna, M. A., M. D.

C. V. MOSBY COMPANY, St. Louis, 1917.

Impotency, Sterility and Artificial Impregnation, by Frank P. Davis, M. D.

F. A. DAVIS COMPANY, Philadelphia and London, 1917.

Handbook of Anatomy, by James K. Young, M. D., F. A. C. S.

THE YEAR-BOOK PUBLISHERS, Chicago, 1917.

The Practical Medicine Series. Vol. 11: **General Surgery**. Edited by Albert J. Ochsner, M. D., F. R. M. S., LL.D., F. A. C. S. Series 1917.

WASHINGTON GOVERNMENT PRINTING OFFICE, Washington, D. C., 1917.

Public Health Reports. Vol. 32, Nos. 17, 18, 19, 20, 21 and 22.

Preliminary Statement to the Press of the United States.

Report of the Health Department of the Panama Canal, March, 1917.

Mortality Statistics (1915). Sixteenth Annual Report. Bureau of Census.

REPRINTS.

The Intermediate Host of Schistosomum Mansoni in Venezuela, by Dr. Juan Iturbe.

A Plea and a Plan for the Eradication of Malaria Throughout the Western Hemisphere, by Frederick L. Hoffman, LL.D.

Classification and Arrangement of Books in the Library of the Surgeon General's Office, by Champe Carter McCulloch, A. M., M. D.

The Surgeon General's Library, by Lieut.-Col. C. C. McCulloch, Jr.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for May, 1917.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	4	1	5
Intermittent Fever (Malarial Cachexia)		2	2
Smallpox			
Measles	1		1
Scarlet Fever			
Whooping Cough			
Diphtheria and Croup		1	1
Influenza		8	8
Cholera Nostras			
Pyemia and Septicemia			
Tuberculosis	51	50	101
Cancer	24	6	30
Rheumatism and Gout	2	1	3
Diabetes	2	2	4
Alcoholism		1	1
Encephalitis and Meningitis		2	2
Locomotor Ataxia	1		1
Congestion, Hemorrhage and Softening of Brain	12	17	29
Paralysis	4	1	5
Convulsions of Infancy	2		2
Other Diseases of Infancy	8	5	13
Tetanus		2	2
Other Nervous Diseases	2		2
Heart Diseases	57	58	115
Bronchitis	3	3	6
Pneumonia and Broncho-Pneumonia	20	21	41
Other Respiratory Diseases	2	1	3
Ulcer of Stomach			
Other Diseases of the Stomach	1	2	3
Diarrhea, Dysentery and Enteritis	30	37	67
Hernia, Intestinal Obstruction	5	5	10
Cirrhosis of Liver	7	1	8
Other Diseases of the Liver	3	1	4
Simple Peritonitis			
Appendicitis	2		2
Bright's Disease	28	20	48
Other Genito-Urinary Diseases	12	7	19
Puerperal Diseases	3	2	5
Senile Debility	1	1	2
Suicide	6		6
Injuries	19	13	32
All Other Causes	21	15	36
TOTAL	333	286	619

Still-born—White, 18; colored, 14; total, 32.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1000 per annum for Month—White, 14.48; colored, 33.65; total, 19.65. Non residents excluded, 18.75.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure. 29.98
Mean temperature. 72
Total precipitation. 1.63 inches
Prevailing direction of wind, northeast.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

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EDITORIAL

UNREST AMONG MEDICAL STUDENTS.

When the first impulse of the movement for war was felt in the United States, the medical military authorities realized the importance of conserving the teaching forces of medical schools, having in mind the unfortunate experience of Great Britain. At the same time, the very valuable organization of the Red Cross units at medical colleges was not discouraged so long as the efficiency of such schools was not materially involved. Most medical schools have accepted the necessary sacrifice in reducing the numerical force of their teaching staffs and have planned a more laborious service for those whose duty has seemed to be at home.

At first medical students were solicited, together with other col-

lege students, to join all sorts of military activities, in officers' training camps, in ambulance service, etc. Quite a few responded at once and are in such services already. A larger movement among the student body of the medical schools was summarily stopped by an imperative edict from the Council of National Defense, joined by the medical authorities of the Federal services, practically ordering all medical students to remain at their studies as necessary for future material for the supply of medical graduates to be needed later on for both civil and military duty.

All deans of medical schools accepted this order, and it required a good deal of persuasion to keep many medical students who were patriotically inclined.

It seems now, with the completion of the plans for the conscription draft, that the War Department has taken no steps to exempt medical students who accepted the advice of their deans in good faith and who desisted from their own patriotic inclination to go into services where preferred opportunities offered.

A natural unrest has arisen, and the rumor of an indiscriminate enforcement of the draft has occasioned many medical students to ask for an exact declaration of their status at this time.

To repeat the advice of the Council of National Defense as fact, when there is grave doubt that the military authorities intend to support it, is bound to place the deans of the medical schools in a questionable position. On the other hand, any other statement is bound to occasion a stampede among medical students, who will very naturally be inclined to follow their original impulse. Any such act will materially affect the attendance at the medical schools for the next few years, and, to precipitate such act of the student body, cannot be encouraged as either wise or characterized by foresight.

The only argument which has been advanced by the military authorities—that so small a proportion of the total of medical students will be affected that it will be negligible—is as potent against as for the draft of such students. If the number is so small that the medical schools will not be seriously affected, that number is likewise too small to make much difference in the sum total called for the army.

Under the circumstances, it would seem worth while to have even so small a group to remain loyal and enthusiastic in their faith in the word of those higher up, instead of engendering the feeling

that the constituted authorities are not to be relied upon for the fulfillment of a promise—which carried with it an order which had been accepted and obeyed.

THE AGE OF PATRIOTISM FOR AMERICAN PHYSICIANS.

It is announced that about eleven thousand medical men in this country have been recommended for commissions in the Medical Reserve Corps. Of these, 1,150, or about ten per cent, are under the age of thirty-five years; ninety per cent are over that age. The military authorities have repeatedly announced that men under thirty-five are wanted for foreign service. There are about 45,000 young men in the medical profession under the age of thirty-five, and 1,150 have so far responded, or less than three per cent! Is the conclusion to be drawn that men under thirty-five, so far enrolling in the proportion of one to nine of their seniors, are unpatriotic? We are loath to use the term "slacker," for surely young Americans are not different from the youth of other countries, and there must be some lack of understanding to explain their delay in falling in.

In a few days there will be nearly a million men under thirty-one enlisted for the firing line. They will need ten thousand medical officers under the age of thirty-five to take care of them, while they are in training and when they are at the front.

Put in other terms, there will be one hundred young men ready to give their lives for the honor of these United States, bearing the brunt of battle, and they are asking that just one young medical man shall serve *behind the firing line*, while they do the fighting.

Louisiana so far has only supplied five per cent of its medical profession for the service; most of these are *over* thirty-five years of age. Instead of a little over one hundred Medical Reserve Corps officers, Louisiana should have at least *four hundred* in uniform.

What are you going to do about it, young men of the South? Are the traditions of the medical profession to be sacrificed at the altar of selfishness, and will it become necessary to impose a forced conscription of medical men under thirty-five to satisfy the present urgent need? Already such a plan is discussed—but it should never come to an issue.

If there are forty-five thousand medical men of the eligible age, why have only 1,150 responded? Why should such a situation prevail? You upon whom the inference falls should give it the lie by a patriotic response which will for all time dispel the thought that in you rises no thought of loyalty, to country, God, or home! What are *you* going to do about it?

PLACARDING FOR MEASLES.

The New Orleans City Board of Health, through its president, Dr. W. H. Robin, has announced that the placarding of houses for cases of measles and of whooping-cough will be discontinued, although the reporting of such cases would remain obligatory.

We believe this action is most wise, and compliment Dr. Robin and his Board upon their decision.

Long have we been impressed by the more than futility of most placarding. It is a measure that frequently defeats its own object, by leading to the concealment of many cases which are not even seen by physicians because householders want to avoid the notoriety which follows a report. Once they understand that a report, instead of leading to unpleasant publicity, will mean correct statistics and useful preventive measures and coöperation on the part of the health authorities, there will no longer be any dread of making it.

As it was, the rule meant either too much or not enough. Either placarding is not necessary or much more than placarding is needed. If non-intercourse is clearly indicated, more active measures of guarding must be resorted to in order to make it effective, when the placard becomes useless. If not, the card remains merely a nuisance, as it rarely keeps people out who would otherwise go in, and never keeps children in who should be out, as those with whooping-cough.

Common sense is not a drug on the market, but is as necessary in health and sanitary matters as in any others, hence we are exceedingly pleased to see clear evidence of the possession of it by our local health authorities, and beg to congratulate them accordingly.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

APPENDICITIS COMPLICATING PREGNANCY.

By AIMÉ PAUL HEINECK, M. D., Chicago.

Appendicitis attacks all ages and both sexes. Though distinctly a surgical disease, it is also of great practical interest to gynecologists, obstetricians and general practitioners.

The frequency of appendicitis in the female pregnant or non-pregnant is underestimated and its significance not fully appreciated. It is often overlooked, misdiagnosed, and therefore improperly treated. The autopsy findings often bring the first intimation of the true cause of the clinical picture.

To serve our fellow-practitioners, we collected, analyzed and studied the original reports of all the operated cases of appendicitis occurring during pregnancy that are to be found in the French, English and German medical literature from 1900 to 1915, inclusive, and also some unpublished personal cases. Cases reported with insufficient data were not considered.

The subject will be discussed under the following subheads:

1. Incidence.
2. Etiology.
3. Combined appendicitis and extra-uterine pregnancy.
4. Pathology.
5. Co-existing conditions.
 - Influence of pregnancy upon appendicitis.
 - Influence of appendicitis upon pregnancy.
6. Diagnosis.
7. Differential diagnosis.
 - (a) Maternal.
 - (b) Fetal.
8. Prognosis.
9. Treatment.
 - (a) Prophylaxis.
 - (b) Indication for operation.
 - (c) Operative.
10. Post-operative sequelæ.
11. Summary.

INCIDENCE.

During the child-bearing age woman is at no time exempt from attacks of appendicitis. In forty-six of our selected cases the age is not stated. The remaining patients were, at time of operation:

Under 18 years.....	3 cases.
18—20 “ inc.....	13 “
21—25 “ “	33 “
26—30 “ “	42 “
31—35 “ “	23 “
36—40 “ “	12 “

One patient 42 years.

The condition occurs in primiparæ and multiparæ; in first, early and late pregnancies; in single and twin pregnancies. Appendicitis can co-exist with other disease processes to which it may be primary, secondary or coincidental.

In the cases forming the basis of this article there are noted thirty primiparæ, twenty deutiparæ, thirty-seven multiparæ.

The number of previous pregnancies, if there are any, is not stated in eighty-three cases. Appendicitis occurs at all periods of gestation. In some cases the disease antedated pregnancy; some cases were operated early, with reference to onset of symptoms; some late. It is recorded that operation was indicated and performed:

During the first three months of gestation, 40 times.

From 4 to 6 months, inclusive, 60 times.

From 7 to 9 months, inclusive, 28 times.

Period of gestation not stated, 45 times.

ETIOLOGY.

The etiology of appendicitis in a pregnant woman is the etiology of appendicitis in the non-pregnant woman. It is the belief of many clinicians that gestation does not exert any influence, good or bad, upon the normal appendix.

Appendicitis is primary or secondary; it may be secondary to disease of the uterine adnexa, just as inflammatory diseases of the tube and ovary may be secondary to an appendicitis. Recurrent attacks of appendicitis may be precipitated by pregnancy, labor or puerperium. Pregnancy can provoke acute inflammatory disturbance in an appendix bound down by dense adhesions or containing a foreign body, one or more fecal concretions or worms. The appendicitis complicating pregnancy may be the patient's first attack. It may have been preceded by one, two, three or more attacks of greater or less severity.

COMBINED APPENDICITIS AND EXTRA-UTERINE PREGNANCY.

In some of the reported cases in which appendicitis and ectopic pregnancy were associated it was not determined which of the two conditions antedated the other, which was primary and which was secondary.

When an appendicitis precedes a tubal pregnancy in which it apparently plays an etiological rôle, the anatomical changes frequently evolve as follows:

1. Appendicitis.
2. Peri-appendicitis.
3. Peri-adnexitis.
4. Formation of inflammatory adhesions interfering with tube mobility and tube function and producing tubal malformation.
5. Tubal pregnancy.

All these conditions favor the ectopic implantation of fertilized ova. Appendicitis may hasten tubal abortion through local infection, through general intoxication, may lead to suppuration of hematoceles or fetal cysts.

To differentiate appendicitis from extra-uterine pregnancy is at times difficult. In the unruptured state the pregnant tube gives symptoms analogous to those of chronic appendicitis. An infected hematocele presents the signs of suppurative pelvic peritonitis. Peritoneal hemorrhage due to a ruptured tubal gestation sac has symptoms closely resembling a diffuse septic peritonitis. Positive Abderhalden test, absence of fever, vaginal hemorrhage, symptoms of internal hemorrhage will point to tubal pregnancy. It is interesting to make an exact diagnosis, but, as both diseases are surgical affections, exposing mother and fetus to serious danger, the watchword should be early operation. Appendicitis calls for prompt operative treatment; extra-uterine pregnancy is an emergency condition calling for immediate ablation of the ectopic fetal sac.

In all the cases of appendicitis and extra-uterine pregnancy herein considered, twelve in number, operation gave excellent results. The findings differed in nature, and consequently the operative procedures varied in extent in the different cases.

PATHOLOGY.

Acute and chronic inflammations of the appendix involve the organ, in part or its entirety, and are associated with catarrhal, fibrinous, sero-fibrinous, sero-purulent or purulent exudates present

in the cavity of the appendix, in its wall or around it. The inflammatory process may be limited to the mucous membrane, may involve part of or the entire thickness of the appendiceal wall.

The appendix vermiformis may be partly or wholly intra- or extra-peritoneal. A retro-peritoneal or extra-peritoneal appendix, the seat of suppurative inflammation, gives rise to retro-peritoneal or extra-peritoneal pus collections. Adhesive inflammation may lead to permanent fixation of the appendix, to one or more abdominal viscera, normal or pathologic, to the abdominal parietes, or to both. Inflammatory adhesions involving the tube may angulate it, constrict it, may interfere with tubal mobility and tubal function, may change its course and play a fairly important rôle in the etiology of sterility. The appendix during a 280-day pregnancy may touch every organ of the abdomen. Pus in quantities, large or small, may be present within the cavity of the appendix, in its wall or around it. Acute suppurative inflammation of the uterus and tubes may be set up by direct extension from an acutely inflamed appendix. The walls of appendiceal or peri-appendiceal abscesses are formed in part by one or more of the following organs: uterus, adnexa, omentum, intestine, small or large, etc. An appendicular abscess may bulge into the posterior cul-de-sac, may open spontaneously into the uterus, vagina, rectum.

The inflammation proceeded to the state of gangrene in twenty-four cases; in eleven of these cases one or more perforations were present. The gangrene may be limited to the mucous membrane, may affect the entire appendiceal wall or the entire organ. Any part of the organ, tip, middle, base, may be gangrenous. Fecal concretions, one or more, were present in thirteen appendices. It is easy to understand how inflammation migrates from the appendix to the Fallopian tube, to the pregnant uterus, etc. These instances of pelvic inflammatory processes, extending by continuity or contiguity of tissue, occur in the pregnant as well as the non-pregnant. Distal pus collections are due to metastases by way of the lymph or blood channels. In the ulcerative type of inflammation, the ulcer extends in depth and in surface area; when all the coats of the appendix have been burrowed through a perforation results. The apex, the base, or any other part of the appendix may be the seat of perforation.

CO-EXISTING PATHOLOGICAL CONDITIONS.

Co-existing pathological conditions are primary or secondary to the appendiceal inflammation, or merely coincidental, bearing no

relation of cause or effect to it. It is not uncommon for appendicitis in the female to be complicated by or associated with tubal and ovarian diseases: salpingitis, pyosalpinx, hydrosalpinx, ovarian abscess, tubo-ovarian abscess, parametritis, etc. Close anatomical association of the appendix with the uterus and the adnexa explains the frequent simultaneous involvement of these organs in disease processes.

INFLUENCE OF PREGNANCY UPON APPENDICITIS.

Upon a normal appendix, gestation has little or no influence. Upon an appendix, the seat of previous or latent disease, pregnancy exerts an unfavorable influence. It can intensify an existing inflammation. It may cause a previous inflammation to recur. In view of this possibility, many of our best clinicians recommend and practice the removal of the appendix in women, married or about to be married, who have had one or more attacks of appendicitis non-operatively treated.

The pregnant uterus, as it ascends in the abdomen, commonly displaces the cecum and the appendix from below up, from right to left and from behind forward. In enlarging, the uterus may stretch existing inflammatory adhesions; it may displace, twist and kink the appendix, and thereby whip into activity latent appendicular infections. Pregnancy is a serious complication of appendicitis: 1, when the appendix is adherent to the uterus; 2, when it is the seat of an inflammation, perforative, gangrenous or suppurative in type; 3, when its inflammation leads to abscess-formation, near or distal; 4, when the uterus forms part of the wall of an appendicular, peri- or para-appendicular abscess. In the aforementioned conditions, adhesions may be torn, abscesses may be ruptured by the enlarging uterus.

INFLUENCE OF APPENDICITIS ON PREGNANCY.

Appendicitis is a menace to the mother's life; it is a menace to the gestation. The danger increases with the advance of gestation, and is most marked after the fourth month. Infection can and does spread from the appendix to the genital organs by way: 1, of the peritoneum (localized or diffuse peritonitis); 2, of the appendiculo-ovarian ligament; 3, of adhesions existing between the uterus and a perityphlitic pus focus; 4, of the Fallopian tube.

Even a mild case of appendicitis may lead to a plastic peritonitis closing permanently the lumina of both tubes. From inflammatory adhesions may result dysmenorrhea, subinvolution, sterility through

inflammatory closure of tubal ostia, habitual abortion, extra-uterine pregnancy, a tendency to uncontrollable vomiting, etc.

Appendicitis in the present state may or may not terminate pregnancy. The prognosis is good as to non-interruption of pregnancy: 1, When the appendix does not hang in the small pelvis; 2, when the inflammation is limited to the appendiceal mucosa; 3, when it does not extend beyond the appendiceal wall; 4, when the appendiceal abscess is small.

Premature termination of gestation, either by fetal death, fetal expulsion, or both, may be caused by: 1, Sequels of previous appendicitis, acute or chronic; inflammatory adhesions, old or recent, preventing uterine expansion; 2, infection from the appendix extending through the tubes to the uterus and its contents; 3, infection reaching the placenta through lymphatic and vascular channels; 4, metastatic inflammation of the placenta disturbing its circulation; 5, local irritation; 6, fatal effect of hyperpyrexia upon ovum.

The further pregnancy is advanced, the greater danger of abortion after operation. The chance of abortion after early operation is very small indeed, for the operation is then done before an extensive inflammation has involved the uterus or an abscess rendered the patient septic. Tendency to abortion is small in clean cases, as in this type the operative manipulation is reduced to a minimum.

In 173 cases of appendicitis herein studied it is stated that abortion was artificially induced nine times and occurred spontaneously forty-nine times. Cesarean section was performed four times. Abdominal one, vaginal three.

In eighty-three cases, pregnancy was not interrupted by the operation. Seventeen cases, no definite statement is made.

DIAGNOSIS

Appendicitis is not as frequently misdiagnosed as formerly. Increased familiarity with the condition enables us to make an earlier and more timely diagnosis. It is an established fact that the morbidity and mortality of this disease can be lessened if it be diagnosed and operated before the advent of complications, perforation, gangrene, abscess formation, peritoneal involvement, etc. The diagnostic difficulties increase with the advance of gestation and persist during the puerperium.

The symptomatology of appendicitis in the pregnant is the symp-

tomatology of the disease in the non-pregnant. Nevertheless, the recognition of the condition is made more difficult by various factors. One or more of the cardinal symptoms may be lacking. The symptoms and signs may not be sufficiently pronounced to lead to careful investigation or may be classed among the various disturbances incident to pregnancy.

During pregnancy the abdominal walls are on the stretch; they lack the softness and pliability so essential to careful and satisfactory abdominal palpation. In very fleshy patients palpation does not give definite findings.

The seat of pain, though always corresponding to the site of the inflamed appendix, may be abnormally high. The leukocyte count gives uncertain findings; at best, it has only relative or corroborative value.

Mistakes are less likely to occur by keeping in mind (*a*) that every pregnant woman is to be examined for physical defects; (*b*) that the history is all-important—ask about previous attacks; (*c*) in gravid women all attacks of indigestion, associated with vomiting and fever, should arouse suspicion and demand a careful examination of the abdomen; (*d*) right iliac pain, unassociated with uterine contractions, should lead one to think of appendicitis; (*e*) deep-seated retro-cecal and other abscesses may be detected by rectal examination; (*f*) peri- or para-typhlitic abscesses may be detected by vaginal examination.

In a pregnant woman, acute abdominal pain of a sudden onset, at first diffuse and then remaining localized to the right iliac fossa, suggests appendicitis; more so if the patient gives the history of previous attacks.

DIFFERENTIAL DIAGNOSIS.

During gestation many conditions simulate appendicitis. As most of these conditions demand operative relief, the resulting diagnostic mistakes are embarrassing and humiliating to the surgeon, but not commonly disastrous to the patient. In adnexal disease the pain and the objective findings are most always bilateral, while in appendicitis they are unilateral and the pain, as a rule, is more acute. Non-ruptured right tubal pregnancy simulates and is frequently diagnosed chronic appendicitis. Rigidity and tenderness over McBurney's point are seldom marked in extra-uterine pregnancy. Intelligent interpretation of the clinical history and of the objective findings furnished by a careful and thorough

abdominal, rectal and vaginal examination helps one to arrive at a correct diagnosis. Abscesses in the pouch of Douglas due to perforative appendicitis have been wrongly attributed to primary uterine and tubal infection; right-sided parametritis due to the spreading of a retro-colic appendicitis has been diagnosed ordinary puerperal infection.

In pyelitis, uteritis, ureteric calculus of the right side, one is guided by the urinary symptoms and findings. Hepatic colic has a sudden onset, with pain, in the right upper abdominal quadrant; this pain radiates toward the right shoulder and is usually apyretic. The pain of nephritic colic descends and radiates toward the external genitalia. In fecal impaction the symptoms are less severe and yield to colonic injections and to laxatives.

In advanced pregnancy the differential diagnosis between appendicitis and cholecystitis may prove difficult, owing to the associated upward displacement of the cecum and appendix by the pregnant uterus.

PROGNOSIS.

Pregnancy increases the severity and the fatality of appendicitis. Death may be due to intestinal obstruction, to perforation of the appendix, to heart failure, to peritonitis or to sepsis. Recovery takes place through the gradual subsidence of symptoms, through the spontaneous rupture of an appendicular abscess externally, or into the gut, vagina, urinary bladder, uterus or other hollow viscus.

The type and the acuity of the inflammation influence the prognosis. The diagnosis is good if the changes in the appendix are slight, if the inflammation is limited to the appendiceal wall, if there be slight or no peritoneal involvement, if complications be absent. It is grave in gangrenous, perforative and suppurative appendicitis and in all cases complicated by abscess formation, near or distal, or by diffuse peritonitis. The results for the mother and fetus are better the less advanced the gestation, the less virulent and widespread the inflammation, the earlier the operation. Maternal mortality of appendicitis in pregnancy increases from the fourth month on.

As far as the child is concerned, prognosis is absolutely good in case of early operated appendicitis. Severe maternal appendicitis is exceptionally grave for the fetus, who succumbs either through infection or through interruption of pregnancy. In our cases there were fifty-eight abortions; of these, nine were induced and forty-

because adhesions of inflammatory origin can (*a*) incarcerate the pregnant uterus in the pelvis and mechanically hinder the enlargement of the uterus; (*b*) impair the contractibility of the uterus; (*c*) interfere with uterine labor contractions; (*d*) entail subinvolution; (*e*) induce sterility; (*f*) disturb tubal and ovarian integrity of function and of structure; (*g*) determine ileus; (*h*) produce abortion; and (*i*) lead to extra-uterine pregnancy.

10. Chief among the co-existing pathological conditions noted in appendicitis are simultaneous or consecutive inflammation of the uterus, tubes or other pelvic organs. The close anatomical relations existing between the appendix and the pelvic organs explain their frequent association in disease processes.

11. Appendicitis has a greater morbidity and a higher mortality in the pregnant than in the non-pregnant, operated or non-operated. It may terminate pregnancy.

12. The symptomatology of appendicitis in the pregnant is the same as in the non-pregnant. The clinical picture, however, is blurred by the co-existing symptoms of pregnancy. Diagnostic mistakes may be lessened by keeping in mind that appendicitis occurs in pregnant women; that a history of previous attacks during the same or previous pregnancies can frequently be elicited by thorough and deliberate physical examination. With care, one can in these cases almost always arrive at a correct diagnosis.

13. To establish with certainty the diagnosis of appendicitis during pregnancy it is necessary to exclude the presence of myalgia due to stretching of abdominal muscles, typhoid fever, ruptured or non-ruptured tubal pregnancy, cholecystitis, salpingitis, ovaritis, adnexitis, ovarian cyst with or without a twisted pedicle, right-sided pyelitis and ureteritis, fecal impaction, hepatic and nephritic colic. At times any of the beforementioned conditions so closely resemble appendicitis as to cause diagnostic errors and operative mistakes.

14. The morbidity and mortality of appendicitis complicating pregnancy and the puerperium are the morbidity and mortality of delay in applying efficient surgical treatment. The initial symptoms of the attack do not enable the clinician to foretell accurately how a given case will terminate. What is going to happen in ten, twenty or forty hours following the onset of appendicitis cannot be foreseen. When the condition is diagnosed and remedied early, the mortality is practically *nil*. Abscess formation may be forestalled

by early diagnosis and early operation. The high mortality is due to late diagnosis and late operation. The pregnant woman whose metabolism is good is a good subject for operative measures.

15. Prognosis is better for the mother if there be no interruption of pregnancy, spontaneous or otherwise. The bad attacks cause abortions, and abortion aggravates the illness. In the great majority of surgically treated cases there is no interruption of pregnancy, and when it does occur it is not due directly to the operation. The interruption of pregnancy is not indicated. It aggravates the prognosis. The fetal prognosis is good in early operated cases.

16. The following prophylactic measures are sound and safe, and are recommended for general adoption: (*a*) During the child-bearing age, recurrent attacks of pelvic pain, dysmenorrhea, menstrual and other pelvic disturbances unassociated with objective pelvic findings are not infrequently due to unrecognized appendicitis or sequelæ thereof. In the presence of this etiological factor the ablation of the appendix is indicated (*b*) in laparotomies for conditions other than appendicitis, the appendix should be examined. Should it present any deviation from the normal, its removal is indicated. (*c*) During the child-bearing age any woman who has had one or more attacks of appendicitis treated non-operatively should have her appendix removed, so as to correct existing pathological conditions and prevent future attacks of appendicitis and complications incident thereto. True prophylaxis in a woman of child-bearing age who has had one or more well marked attacks of appendicitis is an interval operation. It goes without saying that constipation is to be avoided and that other hygienic precautions are to be observed.

17. A definite and accurate diagnosis of acute, chronic or recurrent appendicitis, irrespective of the stage of pregnancy, invariably calls for operation. The disease during pregnancy runs such a rapid destructive course that delay is hazardous. Operation should be early and immediate. A case may be rendered hopeless by hesitation and inaction. Temporizing methods are extremely dangerous.

18. Treat appendicitis in the pregnant female as you treat it in the non-pregnant. Every pregnant woman who is a subject of appendicitis should be operated on just as soon as the diagnosis is made, whether the attack is the first, second or third.

The unusual risks of leaving a diseased appendix in the abdominal cavity are much increased by the pregnant state, and the evil consequences of another attack—*i. e.*, gangrene or perforation—will be correspondingly greater. The danger of recurrence in the later months of pregnancy and in the child-bed period calls for operation, preferably during the attack. If the patient is not seen in time, one will do the next best thing—an interval operation during the pregnancy. Pregnancy is an additional indication for operation in cases of appendicitis.

19. In inflammatory disease of the appendix the ideal operation is appendectomy. In some cases, however, one has to be content with incision, evacuation and drainage of an appendiceal abscess. Exceptionally, drainage of abscesses in Douglas' pouch may be affected through the vagina or rectum. Pus should be evacuated, irrespective of uterine contents and irrespective of its location.

20. It is well to keep in mind that, for an appendectomy, the median incision is contraindicated in the later months of pregnancy; that it is best to avoid or to reduce to a minimum the manipulations of the uterus; opiates are indicated in the after-treatment. Labor, when it occurs shortly after a laparotomy, is not to be unduly prolonged; it may have to be assisted.

PRACTICAL METHODS OF PREVENTING DISEASES IN COMMUNITIES, WITH RESULTS ACCOMPLISHED IN SHREVEPORT.*

By G. C. CHANDLER, M. D., Shreveport, La.

The protection of communities from unnecessary sickness and death is such a simple and inexpensive proposition that the prevalence of preventable diseases, to any extent, is a reflection on the intelligence or public spirit of a community.

The marvelous health records made by Dr. Gorgas on the Canal Zone, where practically all white men, during the effort of the French to construct the canal, died in a few months, has demonstrated what can be done under military rule by intelligent sanitation. The problem of preventing disease in communities where

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

the people rule is quite a different proposition from that under military rule.

The first essential for protecting the health of a community is to obtain the intelligent coöperation of the people. To obtain this coöperation they must be convinced that the benefits of sanitation are largely in excess of the trouble and expense. The people must be educated in the simple essentials that are necessary for the prevention of disease, and, to obtain active coöperation, this education should be confined largely to the essentials, for, too many facts presented, will result in confusion and discouragement to the average layman, so you will not receive the intelligent coöperation desired. The people should be taught that disease germs breed in filth, that germs must be taken into the body, through the respiratory tract, the digestive tract, or by inoculation through the skin, before disease can result from them. With these facts firmly imbedded in the minds of the people, the other steps necessary to prevent disease will occur to any intelligent person who gives the matter thoughtful consideration, but many intelligent people will not give the matter careful consideration, so this education should be carried further.

Disease germs are known to be in the secretions and excretions of the human being—often healthy human beings. How does common sense tell you to keep these germs out of the healthy individual? First, your attention is called to the diseases that are contracted through the respiratory system. While germs may be carried to the respiratory tract in various ways, the most frequent method is in the little droplets of mucus sneezed or coughed into the atmosphere of ill-ventilated homes or places of public gathering. I doubt seriously if any case of communicable disease is contracted in the open air. The importance of proper ventilation, both winter and summer, of the homes and places of public gatherings, the isolation of the sick, coughing into handkerchiefs or towards the floor, with the hand placed to the mouth to prevent these droplets being scattered in the room, are essentials which should be impressed on the people in the efforts to obtain their coöperation.

Second. The prevention of disease through the digestive tract consists of preventing the consumption of food or water contaminated with disease germs. While it is possible for these germs to be put in the mouth of an unprotected baby, or in some other way

reach the digestive tract, contaminated food or water probably causes over ninety-nine in a hundred cases of disease contracted in this way. Food may be contaminated in many ways, but the point to be impressed on the people is that the fly is the principal offender in this method of transmitting disease. He is the one; the fly is the great distributor of germs; filth does not necessarily produce disease; it is simply a breeding-place for disease germs. Disease germs dropped in filth immediately begin to breed, thus becoming a focus of danger. The activities of the fly, its love for filth and the human family and its food, make it preëminently the great distributor of disease. A fly will visit hundreds of filthy places, and possibly only one of them will contain disease germs, but, when germs are present, his sticky legs and omnivorous appetite will take them up and carry them to your food. Other insects not having this wide range of activities cannot be placed in the same class with the flies as enemies of the human race.

Water may be contaminated by flies, but contamination with sewerage is the great source of disease from water. The essential point should be kept before the people in preventing diseases contracted in this manner is to destroy the fly. The people should know that not only disease germs breed in filth, but flies breed there and feed in every filthy place they can find, taking all kinds of germs and carrying them to the unprotected baby's nose or mouth and to the food of the entire family. The reason for dwelling so persistently on the fly is that, in my opinion, it is the greatest distributor of disease germs and greatest enemy of the human race. The people should be impressed with these facts and urged to fight this insect by cleaning up and getting rid of breeding-places, by trapping them at the entrances of buildings, by screening their homes and places of food supply, surface toilets, and by swatting promptly every fly that gets within the screen. The vigorous efforts of the Shreveport Board of Health along these lines have, in my opinion, been one of the potent factors in giving Shreveport its healthy record.

The third way of contracting disease is by inoculation. A person can be inoculated in many ways—by the tick, bedbug, horsefly, etc., but the mosquito is preëminently the means by which diseases are transmitted in this way, so the people should be thoroughly educated in the methods of eradicating these insects. The importance of filling or draining stagnant ponds, screening cisterns,

oiling breeding-places that cannot be eliminated, and finally screening the homes against the pests and swatting all that get within the screens, should be thoroughly impressed on the people. In addition to the educational work, the factors contributing to produce the remarkable health conditions in Shreveport were:

1. The fight for unadulterated, clean milk.
2. The elimination of tubercular cows from the dairy herd, annual tubercular tests of the dairy herd being made and all tubercular cattle being killed.
3. The annual fly-extermination campaign.
4. The annual home-screening campaign.
5. The screening of nearly four thousand surface toilets, thus cutting down the receptacles for disease germs and breeding-places for flies to carry these germs to the food of the people.
6. The bi-weekly examination of the water supply of the city for contamination.
7. The filling or draining of ponds of stagnant water.
8. The oiling of open drains in the city where mosquitoes might breed.
9. The screening of all cisterns.
10. The exclusion from school of all children in families where epidemic diseases exist.
11. The vigilant supervision of the sanitary conditions of the city and its food supply.

Five years' trial of the plan suggested above has resulted in a marvelous health record for Shreveport. On the installation of our first fly-swatting and clean-up campaigns in 1912 there was an immediate and marked drop in deaths in our city, and it has remained low ever since. During 1916, fourteen common preventable and epidemic diseases caused only twenty white deaths among the residents of Shreveport. These same diseases, with the death rate of cities and towns of the registration area, would have caused ninety-nine white deaths instead of twenty.

In 1880, when Shreveport was a village, there were more white resident deaths from these diseases than in 1916. The diseases included in making the total of twenty deaths were as follows: Typhoid fever, 0; smallpox, 0; scarlet fever, 0; whooping-cough, 0; diphtheria and croup, 0; all other epidemic diseases, 0; influenza, 0; bronchitis, 0; pneumonia, all forms, 11; pulmonary tuberculosis, 6; all other forms of tuberculosis, 0; simple meningitis, 0; diarrhea, under two years of age, 2.

If Shreveport had the death rate for whites in the cities and towns of the registration area, our deaths from pneumonia would

have been thirty-one—that is, eleven more than occurred in Shreveport for all diseases, including pneumonia. Pulmonary tuberculosis would have caused twenty-seven deaths—that is, seven more than occurred from the above diseases, including tuberculosis.

Owing to our Charity Hospital and fine sanitariums, with the large oil fields and tributary territory non-resident deaths, especially from fevers, tuberculosis and pneumonia, were more numerous than the resident deaths, the non-resident deaths more than doubling the resident deaths, but, even including these, our total white deaths for the above diseases were only sixty-four.

If the people are posted and will take precautions, there is no reason why any of the epidemic diseases should spread to the other member of the family if the case is isolated. During 1916 there were twenty-three cases of scarlet fever reported in Shreveport. Two had two cases each in the family when reported. All of the families except four had from two to eight children, and in not a single instance was there any spread of the disease even among the children of the family. There were seven cases of diphtheria reported, without a report of the spread in a single instance. Whenever a house is quarantined, a card with the simple regulations necessary to protect the other members of the family is furnished by the Board of Health. During the four and one-half years of the administration of the present Board of Health, although our city has had a large increase in population, there were 421 less deaths from preventable diseases than in the previous four and one-half years. If non-residents are included, with 637 more deaths in the hospitals than during the previous four and one-half years, there was still a reduction of 264 deaths from those diseases.

DISCUSSION OF PAPER BY DR. CHANDLER.

Dr. T. J. Dimitry, New Orleans: In discussing this paper on practical methods of preventing diseases in communities, I would like to ask the essayist if he considers that all these methods are quite reasonable. To me, as applied to the City of New Orleans, it appears that some of these practical methods are unreasonable. For instance, we have had an epidemic of measles, and it seems unfortunate to think that children who are immune to this disease are isolated and forbidden to attend school, when another member of that family has measles. For instance, one child may have measles and the other children are isolated in that home, and are not permitted to attend to their regular school duties, though they have previously had the disease. I would like to ask the essayist whether Shreveport is doing more than New Orleans so as to correct the unreasonableness, or are they reasonable in their practical methods in preventing diseases in communities?

Dr. Grover Cleveland McKinney, Lake Charles: I want to register a protest against Dr. Chandler's placing so much importance on the fly as a carrier of diseases as against other methods. During the past year I have had occasion to study most of the epidemics of typhoid that have occurred in the United States, and also those in foreign countries on which I could find literature. For instance, I studied about fifty epidemics that occurred in the State of Ohio alone, dating from about 1880, and find that nearly all these epidemics have been water-borne. I believe that can be stated as a fact beyond dispute, because the American Waterworks Association, which ought to be an authority, has recently passed on the question, and it seems that if the engineers who are working for water corporations admit that they have been distributing a water supply to the people that has been causing typhoid it should be authoritative.

We know that typhoid is a disease that has been, to a great extent, considered a rural disease, and have, therefore, hastily jumped to the conclusion that it is a fly-borne disease. That this is not true can be easily learned by consulting such authorities as Rosenau and Whipple, also from one's own observation. Go, for example, into any unsewered town that has a good, pure artesian water supply and you do not find typhoid prevalent, although flies may exist in far greater numbers than in the rural districts. Go into cities that have recently had epidemics of typhoid and you will find in the sewered districts, where the fly is effectively screened out, because of the better class of homes, that typhoid has been very prevalent, due to the polluted water supply that had been delivered through the water mains. While, on the other hand, in the same city, outside of the sewered district and where they do not receive the polluted water supply, but have their own private cistern, you find practically no typhoid, although they have surface privies and flies swarm in clouds into unscreened homes. I admit that the fly is a dangerous and inexcusable nuisance, and that it is a factor in the dissemination of typhoid and allied diseases, but it is the consensus of opinion of the leading sanitarians of the world that too much importance has been attached to the fly as a carrier of disease, overshadowing more important and dangerous causes. We have strained at a gnat and swallowed a camel; we have blamed the fly and overlooked the principal dangers.

Regarding the control of scarlet fever in Shreveport, I wondered why Dr. Chandler did not mention measles. I do not think he meant to convey the idea that there has been no measles in Shreveport, and I would like to know if he has had any success in controlling measles. I have succeeded in partly controlling measles in several communities by placarding. Of course, every physician knows, or should know, that measles is such a highly communicable disease that the damage is usually done before the placard is put up. Late investigations show that the disease is communicable three or four days before the fever appears, before the patient feels ill at all. It is most communicable at the time when sneezing and coughing are at their height. I wondered if Dr. Chandler's control of scarlet fever and diphtheria were not due to the fact that these diseases are feebly communicable as compared to measles.

To give you an idea how highly contagious measles is, if you want to use the word contagious, in the Sulphur school within the past two weeks measles broke out in about twenty families. On investigation I found that one doctor had failed to report a case of measles, which occurred in a family

about the 10th of March. A child from this family was in school on Wednesday, was taken sick Thursday, and two weeks from that date over 95 per cent of the cases were traced to that one exposure. The children in these twenty families that came down with the disease were in the second and third grades—grades exposed to above mentioned case—so that if the doctor had reported the first case to me I could have prevented the outbreak in this school.

Dr. Dimitry mentioned the keeping of children out of school. I personally believe that great injustice is done in keeping children out of school from families where the children have already had the disease. There is no reason to suppose that any person carries any disease in his clothing except in rare instances. If a tubercular, for example, should expectorate on clothing, it is reasonable to presume that infection might be conveyed in that manner. But, in going into a room where measles exists, this danger does not arise. I have never stopped any children from school, who had had measles, on account of the disease existing in other members of the family, and have never had a case to occur from that source. I allowed one boy, who had been exposed, to continue in school for ten days. He was then quarantined in his room, with the result that not only did no other case develop in the school, but no other member of his family developed the disease.

Dr. P. W. Bohne, New Orleans: I rise to enter the discussion of Dr. Chandler's paper and to put myself upon record as one of the assistant medical directors of our public schools in New Orleans in view of the question Dr. Dimitry has asked the health officer of Shreveport as to the reasonableness of keeping children who have had measles from attending the public schools.

In discussing this matter and putting myself on record, I do not wish to be understood as representing the position of the City Board of Health, particularly, but I rise for the reason that the Department of Hygiene of the New Orleans public schools, of which I am a representative, have to work in coöperation with the City Board of Health, and up to the present time we have had nothing but the most congenial coöperation. Only two meetings back our Board of Directors of the Public Schools, through whom we deal with the City Board of Health, saw fit to bring to the attention of our City Board of Health that particular question, and Dr. Moss, who is our chief medical director, in his report two meetings back, has asked that the Board of Directors and the Superintendent of our public school system request the City Board of Health authorities, if they saw fit, to agree with us not to eliminate or exclude pupils from our public schools who have already had measles and who are immune to further inoculation or further development of this disease.

I do not know definitely whether Shreveport has medical inspection of public schools or not, but I could not possibly allow the question of Dr. Dimitry to be answered by the City of Shreveport without putting myself and our department on record as looking into and protecting the children who are already immune to the disease any longer without unnecessary loss of time, if the medical profession feels there is no further danger from those who have already had the disease and spreading it to those who have not had the measles.

Dr. I. I. Lemann, New Orleans: This matter of keeping children out of school who have had measles is an important matter, and I have a fellow-feeling with Dr. Dimitry. He has had an experience like my own, of having his child, like my child, kept out of school.

It is pretty well recognized now that the most contagious period of

measles is the period of onset. It is the latter part of the period of incubation, where the child is beginning to sneeze before the eruption. My older child had measles, and ten days after the onset of his disease the second child came down with measles. Meanwhile the older child was well and could have gone to school, but was kept out of school during the whole period of the second child's illness. The first child was the safest child that could go to school, because that child could not be a source of danger to the children with whom he came in contact. I think this is a very important matter, and the service of Dr. Moss has rendered to the community in order that this injustice may be corrected is valuable.

Dr. D. O. Willis, Leesville: I have listened to this paper and discussion with a good deal of interest. I have had some little experience along these lines, having served for six years as a health officer, and it rather occurred to me that this whole discussion has drifted off into a channel that was not set forth at all in the original paper. It did not occur to me at all that Dr. Chandler set forth in his paper anything about isolating children who had already had measles from the public schools. I may be wrong about it, but I did not understand it in that way. I understood Dr. Chandler to say that we should isolate the sick patients, and, if that is his method, certainly none of you can question its right. It occurs to me there is only one point to discuss, and that is the one brought up by the gentleman from Lake Charles. I do not think too much stress can be laid on the point of contaminated water as a source of infection in spreading typhoid fever. I doubt if we can put too much stress on the house-fly as being responsible for it also. The doctor said a moment ago that if we went into the filthy districts of the negro population of a city, if they had pure water, we would not find any typhoid fever. But, if we do not, it simply means that typhoid fever has not been injected into that community. The fly does spread typhoid fever. That has been proven over and over again, and I do not think we can attach too much importance to the fly as a carrier of disease. It is possible that Dr. Chandler excluded other things as in favor of the fly, but I do not think it is possible for us to fight the fly too hard; the mosquito as well.

I am in hearty accord with the statement that it is not right to exclude children from our schools who have already had the disease we are fighting, and that has been a rule with me as health officer and in my connection with boards of health, not to exclude the children from school who had no form of contagious disease because that disease might exist in the home in which they lived. It has been my belief, and it is the general consensus of opinion of health officers, that if a child has already had the disease he is safe. I do think we should isolate a person who has a contagious disease completely from those who go to school. That is possible in the home; put the sick patient into a room to himself and let the other members of the family go along. I have followed that plan with all forms of contagious disease and got along nicely.

Dr. P. W. Bohne, New Orleans: If I am not out of order I would like to say that I did not discuss the question of Dr. Chandler's paper, but I discussed the discussion on his paper by Dr. Dimitry in putting myself on record in regard to the work that the Department of Hygiene of the public schools of New Orleans has attempted two months ago through influencing our City Board of Health of New Orleans to avoid loss of time.

Dr. T. J. Dimitry, New Orleans: I had a perfect right to ask the

above question, in so far as the subject dealt with was "Practical Methods of Preventing Diseases in Communities." The title was one of generality, and hence my privilege to ask the question.

A point I would like to emphasize is that there is a desire to correct this objection to unnecessary quarantine, which has been consistently advocated by Dr. Moss, Dr. Wymer and Dr. Bohne; the three are doing medical duties for public schools of New Orleans. I wish to say that these gentlemen are conducting a campaign in a praiseworthy manner, for they think it is a step forward.

Dr. J. T. Abshire, LeRoy: Dr. Chandler should receive the congratulations of this body for his paper, and I believe all cities ought to take a cue from Shreveport and see if they cannot get as good work done in other cities as in the City of Shreveport, instead of trying to find out how measles is controlled. The City Board of Health of Shreveport has not discussed the matter of how the New Orleans City Board of Health is acting. I believe that we ought to be thanking Dr. Chandler for what he has given us to-night, and I do not think we could do better than to have this paper put in pamphlet form and distributed to every city and town in the State, because I am satisfied good work has been done and is being done in preventing diseases in the City of Shreveport.

Dr. Jno. H. Cooper, Welsh: I have had some experience in controlling contagious diseases, and I think Dr. Chandler's paper is very much to the point. However, I would like to endorse some of the statements made by Dr. McKinney, my neighbor, with whom I have had the pleasure of working on some occasions. I have in my mind at present particularly an outbreak of typhoid fever in a community near the town in which I live. In the first case I was called I began to undertake to find the source of infection, and discovered that a year before a negro child had died in a yard where there was a well from which the sick was using water. The history of the case, so far as I was able to ascertain, was that the child had died of typhoid fever. I kept a record of the cases of typhoid fever that occurred in that community on that occasion. I think there were seventeen cases of typhoid fever, and without exception they were among children who had attended that school. Of course, as soon as I came to the conclusion that the infection came from that well, I immediately had the well closed up, so that there was no water used from that well for that season or since. I would not minimize the bad results that come from the fly, yet I believe, as Dr. McKinney does, that we should not lose sight of other sources of infection. In this particular outbreak of typhoid fever I do not think flies had anything to do with it. Excrement was dumped on the ground or in the open privy near the well and was conveyed by seepage or otherwise, washing into this well and having infected these children.

As to the isolation of children, my rule has been that when I have a case of scarlet fever or measles or any contagious disease in a house I immediately put that child or that person in a room of that house, and keep the balance of the family isolated, except some one who has necessarily to take care of the sick person. If there are children in the house who have had the disease I put them under no restrictions whatever, so far as school is concerned. If there are children in the house who have not had the disease I let them go to school for a week or ten days, then I require them to stay at home until the period of incubation has elapsed. If the disease does not develop, they are allowed to go to school, and if it does develop, the child or children are isolated in rooms and the convalescent is allowed to go to school.

Dr. Chandler (closing): I hope the members of the Society did not understand me as intimating that typhoid fever did not occur from polluted water. In my paper I simply discussed the prevention of diseases and the different methods of transmission of various diseases. Of course, we all know that contaminated water is a very frequent source of typhoid fever, and, while it may be the most frequent source, my reading does not point that way, and of three recent epidemics coming under my observation, two were from contaminated milk, which, in all probability, was due to flies. But this is not at all the question discussed in my paper. We were not discussing typhoid, and I mentioned that one of the principal sources for the transmission of disease through the digestive tract was impure water.

As for measles, it seems to be a warm proposition, and one that is dangerous to tread upon, but I will tread upon it. I have had some experience with measles. At first I tried the plan of allowing children in the families where measles existed to go to school and instructed the teachers to send them home on the first signs of cold or sore eyes, and measles flourished like a Green Bay tree, continuing to increase for a month or more. Then all were excluded. If you expect to protect the public from disease and let anybody who tells you that their children or child has had that disease, don't you know you won't find any of them that have not had it? Of course, you won't. You will simply waste your time. Before I would quarantine measles without excluding the children in the families where it exists I would let them all go to school. When we excluded them all, measles continued to increase, so a notice was published in the paper that measles was a serious disease, that it had many complications, that it killed many and left many with permanent injury, and that, failing to report the disease, was a violation of the law, rendering the guilty party subject to fine and imprisonment, and that the Board of Health would send inspectors into every neighborhood where measles existed and every house would be inspected to find any case not reported. That month we had a tremendous increase in measles; we had nearly 380 cases reported. The next month we had ninety-two cases, and the next month sixty cases, and this month we have had only about ten.

The reason I did not mention measles in suppressing contagious diseases was because doctors themselves tell the people it cannot be suppressed. I have had doctors tell me that there is no way to suppress it. If you tell the people that, you do not get their coöperation, which is absolutely necessary if you desire to have a healthy city. The people must be with you. The fact that measles is most contagious before the eruption appears makes it absolutely necessary to keep children who live in infected houses away from the public school until you know they have escaped the disease. If you think measles is so trivial as not to require efforts for suppression, why, send them to school.

I have taken the position that all epidemic diseases among children were contracted principally in the school-rooms. I believe in allowing the bread-winners to go out and make their living and in having the children stay on the premises. Last January measles started and went up and up until about June, when we had twenty or thirty cases reported. The school term ended, and in July we had two cases reported. In August we had one, in September we had none; in October we had twenty, and then it went on up. Is not that proof that the school is where the disease is spread? If measles is worth preventing, it is worth doing right.

TREATMENT OF PNEUMONIA IN EARLY LIFE.*

By L. R. DEBUYS, M. D., New Orleans, La.

In the treatment of pneumonia in early life, the two types of the disease, lobar pneumonia and broncho-pneumonia, must be differentiated, as the success in their treatment will depend upon the knowledge and recognition of their pathological processes in their various stages.

While the general plan of treatment is the same, it must be modified to meet the requirements of the individual case. In the experience of the writer, this plan provides for: (1) Rest; (2) proper nourishment; (3) an adequate supply of oxygen; (4) counter-irritation; (5) uniform temperature to the thorax; (6) judicious medication.

The modification in the treatment will depend upon: (1) The type of the disease; (2) stage of the disease; (3) severity of infection; (4) age of patient; (5) state of nutrition; (6) resistance of patient.

It can be safely said that the earlier the disease, no matter what it may be, is recognized, the greater is the assistance which can be given the patient to assist nature to restore conditions to their normal.

A careful history should always be obtained whenever possible. It is in this way that information which may be of assistance can be secured relative to whether the pneumonia is primary or secondary. Primary pneumonias are usually pneumococcal and lobar, and secondary pneumonias usually of mixed infection and broncho. This has a bearing on the duration and prognosis of the case and future health of the patient, as pneumococcal pneumonias are self-limited, but of variable duration, depending upon the severity of the infection and the resistance of the patient, and the recovery is complete; whereas the pneumonias of mixed infections are of prolonged duration and there is always some resulting damage to the lung tissue.

The examination of the patient should always be thorough. Especially is this so in cases of pneumonia in infancy and childhood. In this way many cases of pneumonia can be recognized before the ordinary physical findings in the lungs are present. A patient with a jerky respiration, respiratory grunt, movement of

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the alæ-nasi, cough, and fever, must suggest to the examiner pneumonia, the presence of which disease must be excluded rather than proven. In many instances these will be the earliest evidences of pneumonia, the physical findings in the lungs becoming evident later.

The physical findings of pneumonia in infancy and childhood are the same as in the adult. Care, however, must be exercised, so that (1) bronchial râles may not be confused with friction sounds, (2) exaggerated puerile breathing, with bronchial breathing, and (3) the presence of bronchial breathing may not cause the examiner to overlook the existence of fluid.

In making the examination it should be borne in mind that each child will give its individual result, depending upon its development and the structure of its lungs. A comparative examination should, therefore, be made, comparing points on one side with corresponding points on the other side, the baby being held by its nurse or placed on a bed, so that both sides will appear under similar conditions. It should also be remembered, because of the feeble muscular development of the thoracic walls and the soft, yielding character of the thoracic frame at this time of life, that position may influence the functioning of the lung upon the thorax at which side the patient rests.

At this age, also, an acute congestion of the small air vesicles may interfere with the respiration of the patient, as would a consolidation; there is also a tendency on the part of a lobule or lobules to collapse. On the other hand, emphysema may be easily produced because of the delicate walls of the air cells.

It should be finally remembered that consolidation may be present without any apparent change in the percussion note. This can be readily explained by the presence of a consolidated area being surrounded by healthy or emphysematous lung. It is in these cases that it is difficult to depend upon the lung-finding for the diagnosis, which must be made by the symptoms, other than the physical findings in the lungs, already mentioned. It was in these cases also that the central pneumonias were believed to exist, whereas it has been shown clearly by means of the X-ray that the consolidated areas are superficial and the consolidation extends from without inward.

Whenever flatness is present, fluid must be excluded, and in children under three years, when fluid is present, it is usually purulent.

With the knowledge of the foregoing, the recognition of pneumonia in infancy and early childhood is an easy matter. In many instances, particularly in the primary or lobar variety, the disease begins so abruptly that prophylactic measures are of no assistance, whereas the secondary type, or broncho-pneumonia, may frequently be averted by giving the proper care and attention to the ordinary infections of the respiratory tract and upper respiratory passages, because of the great tendency for the infections to spread from the larger to the smaller-bronchi.

Rest plays an important rôle in the treatment of pneumonia, as much so as it does in inflammation in other parts of the body. In pneumonias, because (1) it lessens the combustion in the body thereby, (2) decreasing the demand for the oxygen for the individual, (3) lessening the respiratory rate, causing less exercise to the inflamed lung, which tends to favor resolution; (4) diminishing the heart's action, (5) sparing the heart muscle and (6) causing a decreased demand for food in the patient, who already may have a disinclination for it.

Food: The patient should be nourished with the foods which are least apt to cause any additional symptoms, foods which are easily digested, which will spare the protein waste in the body, and foods which will readily supply the needed amount of calories to maintain the body temperature. The carbohydrate foods meet all these requirements. They may be given in both their soluble and insoluble forms—the former as lactose, glucose and dextri-maltose more particularly, and also sucrose, and the latter in the form of cereals and toast.

Air: The rapidity of the breathing of the patient with pneumonia is proportionate to the involvement in the lung or lungs, influenced by the pleural development, tending to prevent the deeper inspiration. The smaller the lung area for blood areation the more rapid the respiration for the patient to secure the amount of oxygen he requires. In all inflammations in the body, rest is regarded as of prime importance in its treatment, and movements or exercises of the inflamed parts tend to increase the congestion. This holds true also with the inflamed lung tissue. By assisting the patient to obtain the oxygen he is breathing rapidly to secure, his respiration will become easier, either slower or not so labored, due to his securing more oxygen with a shallower respiratory movement, and both the pleuræ and lungs will become less exercised,

which will assist in overcoming the inflammation. It is a common sight to see patients with lobar pneumonia resting on the side of the affected lung. From experience the patient learns that it is less painful, respiration is easier, and he is more comfortable by assuming this position. The partial immobilization of the affected side while in this position provides an easier and freer movement on the other or healthy side.

Fresh air is universally considered essential in the treatment of pneumonias, because it readily supplies the oxygen the patient is demanding. Fresh air may be cold, warm, dry and moist. The treatment of the two pneumonias, lobar and broncho, are very much the same, but in regard to fresh air particularly there is some difference. Lobar pneumonias can withstand the open treatment, with the atmospheric changes, unless they are extreme, and seem to do well with it, because of its exhilarating and stimulating effect upon the patient; hence, lobar pneumonia should be treated out of doors, or, if indoors, everything should be kept wide open. Bronchopneumonias, on the other hand, have a harder time to get the oxygen. They require air, as evidenced by their relatively more rapid respiration, but this type of pneumonia does not do as well with the open treatment, because of the bronchitic involvement. While they need as much or more oxygen, they do better indoors, in a uniform and dry atmosphere. Hence, these cases should be kept indoors, with as many openings in the room as is consistent with maintaining a uniform temperature and with a fire in an open fire-place if necessary.

Sunlight is beneficial to all pneumonias. Oxygen has been looked upon as of assistance in pneumonia, particularly as a "dernier resort." In their texts some authors say an oxygen tank should be at hand in case there is cyanosis. There may be many practitioners who have become discouraged because of lack of uniform results, and look upon its value with question. If, as is admitted, oxygen does well some times in the extreme cases, it does not seem fair to pass judgment upon it without trying it earlier, as it may have been used too late by those condemning it.

It has been the practice of the writer for some time past to employ oxygen at the beginning of pneumonias, with the result that its rôle in the treatment of pneumonia, both lobar and broncho, is believed to be fixed. Nature never intended that oxygen should be given pure, or we should be living in an oxygen-pure atmosphere;

hence it is not necessary to place the cone over the patient's nose and mouth, as in giving an anesthetic, but to hold it near the patient's face, so that it may be mixed with the air. It may be argued that it is too expensive to use as a routine. In the writer's experience, the expense of the oxygen (\$10 or \$12) will be a saving to the patient, both in assisting in shortening the duration of the disease and in lessening the cost of the illness by the shorter duration, aside from the results being better from a prognostic viewpoint, both as to outcome of the disease and upon the future of the patient.

Oxygen may have come into disfavor partly because of its cost, because of the number of tanks necessary in a case of pneumonia. This occurs when the oxygen is wasted. Observations made by the author in administering oxygen as is done in his cases show that a tank of 250 pounds pressure will last for about fifteen days. The plan is to give the oxygen for ten minutes every hour, allowing three bubbles to the second (thirty to ten seconds—180 to the minute) to pass through the water-bottle. In this way observations have shown the tank of oxygen to last from sixty to seventy hours of active running. Ten minutes to the hour will be 240 minutes to the day, or four hours a day. $60 \div 4 = 15$ days.

Counter Irritation: May be produced in many ways, the most frequent means being mustard, in the form of pastes or poultices, and turpentine. Certain clay products are sometimes used in pneumonias, but are mentioned here only to be condemned. It would be as fair to the adult with pneumonia to apply a plaster cast to his thorax as it is to place a covering of clay on the soft, yielding thorax of the defenseless infant or small child. The only claim for it which cannot be disputed is that it maintains a uniform temperature. The advantage of the warmth is entirely offset by the disadvantages of the resistance to respiratory movements.

Mustard, whether used in paste or poultice, must be cautiously mixed, lest a blister be formed if the mass is not homogeneous. The advantage of mustard is that it is a reliable counter-irritant, but unfortunately, when removed, the surface loses the uniform temperature so essential to the treatment of pneumonias. This is especially so when the mustard poultices are used. The poultice is placed around the thorax of the patient while very hot, and frequently causes pain from its heat before the effect of the mustard as a counter-irritant is produced, and, besides, it causes a certain

amount of psychic shock to the little patient after the first application, because of the pain. Aside from this, the warmth of the poultice is soon lost and the patient lies in a soft, clammy, and oftentimes cold covering, which is sufficient to overcome whatever beneficial effect is produced by the counter-irritation of the mustard and even to favor an extension of the disease.

By far the best means at our command to produce counter-irritation is turpentine. Turpentine probably has come into disuse because of its not producing the desired effect. This is due to the fact that it is not used in sufficient strength. It should be combined with either tallow or, preferably, olive oil. Olive oil with turpentine may be used in the proportion to meet the needs of the reaction of the skin of the individual patient. The writer uses it in the proportion of one part of olive oil to four, six, eight, ten or twelve parts of turpentine, and it is astonishing how strong turpentine may be used before the counter-irritation is produced. The olive oil in the mixture serves two purposes—first, to prevent the overaction of the turpentine; and, second, to maintain a uniform temperature of the thorax, and thereby to prevent any chilling of the surface. Olive oil is the antidote to the action of turpentine on the skin. The application should be made at sufficiently frequent intervals to produce a uniform and continuous flush. The effect of each application may be prolonged if an undershirt, not tight, of wool or woollen mixture is worn next to the skin, and above this an oiled silk jacket lined with some flannelet, which also increases the life of the oiled silk. The jacket should be made so as to come well over the shoulders and to extend well over the hips and should be loose.

Turpentine used in this way does not produce any untoward symptoms upon any of the organs; on the contrary, it is possible that it has a beneficial effect on the mucous membrane, particularly of the respiratory tract, judging from the clinical course of the patient upon whom it is used.

Medication: Most cases of pneumonia are overmedicated. In a child especially is this of serious importance, as it may, and frequently does, interfere with the nourishment of the patient, resulting in his diminished resistance, due to poor nutrition, with a consequent prolongation of the illness or an unfavorable termination. At the onset of the pneumonia a calomel purgative is usually of advantage; especially is this so in the broncho-pneumonias.

The pathological picture should always be borne in mind. If a lung is solid it is useless to expect drugs, with their disinfectant properties depending upon their elimination through the mucous membrane of the lungs, to have their effect upon the diseased part of the lung, because the mucous membrane in the consolidated area is not functioning.

During the stage of congestion the alkaline drugs have their beneficial effects in assisting to alkalinize the products of inflammation and thereby in assisting resolution and in stimulating secretion. The acetates and citrates of potassium and sodium are those referred to. The ammonium salts, carbonates and chlorides, are also of assistance in producing this effect, also the iodides of the above-mentioned drugs. Aromatic spirits of ammonia not only serves as an alkaline, stimulating expectorant, but also as a very rapidly diffusible respiratory stimulant and cardiac stimulant as well. Many cases of pneumonia need no other medication. Particularly is this so of the lobar pneumonia. In broncho-pneumonia the same drugs for the same purposes are used. Broncho-pneumonia may require more medication than lobar pneumonia, because of its accompanying bronchitis, and also because of its tendency to involve one part of a lung after another. In this type, creosote is indicated, as it is eliminated by the lungs and thereby tends to prevent further involvement of the lungs, which is the usual cause of the prolonged and irregular course of this type of the disease.

Where there is much bronchitis, sweet spirits of niter serves a distinct purpose and should be given in large doses. For the severe asthmatic complication so often seen in those patients who are sufferers of frequent attacks of broncho-pneumonia, sweet spirits of niter, amyl nitrite and epinephrin are of advantage, never losing sight of the especial value of oxygen in these cases.

The foregoing is usually sufficient in the treatment of pneumonias. However, special symptoms are to be treated as they arise.

Temperature should be looked upon as an evidence of what is going on in the lung and should not be combatted unless it goes too high or is accompanied with unfavorable symptoms, such as drowsiness, delirium, convulsions, rapid and weak pulse, restlessness and sleeplessness, in which instances hydrotherapy, phenacetin or ice to the head are indicated. Infants and small children do not tolerate cold as well as they do the tepid baths, which are frequently sufficient, especially when ice to the head is employed. For the

toxemic depression occasionally encountered, atropin and strychnin by needle, and for convulsions, chloral by rectum.

Ammonium bromid is of advantage when there is sleeplessness or excessive cough.

In heart and respiratory failure, epinephrin, atropin and circulatory stimulants, as camphor, digitalis and strophanthus, should be used, as well as alcohol, caffein and strychnin, also dry cups, hot mustard baths, and oxygen continuously.

In the cases recognized early, however, and even in most of those seen late, the plan of treatment advised in this paper has, in the experience of the writer, obviated the necessity of employing these extreme measures.

DISCUSSION ON THE PAPER OF DR. DEBUYS.

Dr. J. T. Abshire, LeRoy: This paper of Dr. DeBuys is one of great importance to the general practitioners of the country. The doctor has covered the subject pretty thoroughly. I wish to elaborate a little upon some phases of both forms of pneumonia. Lobar pneumonia, in my experience, in childhood and infancy, is always a mild disease. I have never lost a case of lobar pneumonia in a child below five years of age. The only thing I am afraid of in connection with lobar pneumonia is one of the sequelæ, and that is empyema. Broncho-pneumonia, to my mind, is almost invariably secondary, and follows, generally, measles and typhoid fever, and the percentage of deaths is almost fifty per cent. When the doctor says broncho-pneumonia requires the same remedies as lobar pneumonia and the same amount, I should say it requires much more, and there is nothing more tedious than to treat secondary broncho-pneumonia in children. These little children will almost drown in their own mucus sometimes. I have seen attacks of syncope in cases of broncho-pneumonia, and the only thing I have discovered of value in such cases is a mustard poultice applied around the chest. You get the little child to cry as quickly as you can and give it good fresh air, and, if possible, in broncho-pneumonia, dry and warm air is indicated.

In circulatory collapse I have found alcohol in the form of good brandy the best agent in managing this complication. Broncho-pneumonia appeared in my parish last winter and many of the patients died of it following measles, and it is my experience that we should be watchful for this terrible disease of childhood in typhoid fever, measles and influenza.

Dr. W. H. Hamley, Lake Providence: I would like to ask Dr. DeBuys if he advocates the use of phenacetin in controlling temperature. I have not had one or two thousand or three thousand cases, but I have had some bad results from the use of phenacetin, and so far as controlling these temperatures is concerned it has been a hard matter for me. I have not used sweet spirits of niter.

What does he consider the best remedy to control cough? Cough is naturally bound to accompany the disease, and it puts the patient in bad shape after a while if it keeps up.

Dr. D. O. Willis, Leesville: I would like to ask Dr. DeBuys, or any other member of the profession, if he has had any experience in the use of phylacogen in the treatment of pneumonia, and if so what is his opinion of it? I have been using it for about six years in some selected cases. I have not had a fatal result; but some years ago, when I first began the use of phylacogen, I had some very discouraging results. I almost had prostrations, but I have since reached the conclusion that most likely the prostration was due to excessive doses of the drug. I am not very enthusiastic about it, and I only use it in what I might term an experimental way. As I have said, there was almost complete prostration, profuse perspiration, complete relaxation, and a sudden cessation of the fever, which, by the way, would not remain away, but as soon as these patients were out from under the influence of the phylacogen the fever would return. While I have used phylacogens in a few cases within the last few years, in place of giving something like 8 or 10 c. c., I give 1 or 2 c. c. I have not given over 2 c. c. in the last three years. In some of the cases the agent seems to have done a good deal of good, and in other instances not.

Dr. D. I. Hirsch, Monroe: I want to compliment Dr. DeBuys on his paper. There are one or two points on which I would like to ask him questions. In the treatment of broncho-pneumonia I do not think we can lay too much stress on prophylaxis, because most of these cases are secondary and there is mighty little the doctor can do. I would like to ask if he has ever had any bad results from the use of adrenalin? Occasionally those giving it in urticaria and one or two other conditions have had bad results. I have seen some bad results.

Dr. J. A. Tucker, Baton Rouge: Dr. DeBuys has left out a point, in my experience, that has been of great value, and that is the daily administration of small doses of castor oil. Where these fellows swallow enormous amounts of mucus and pus the constant elimination by castor oil does a great deal of good. I would like to recite my experience in treating a case this spring.

I had a child, five years of age, who continued to have pneumonia for about two weeks, and I called in another doctor. He suggested a sero-bacterin. I did not believe it would do much good, but that was his only suggestion and it was tried. Whether the child was at the end of the disease or not I do not know, but he certainly got remarkable results from the administration of one dose. In two more days the child received another dose, and in another couple of days he was practically well.

I would like to ask Dr. DeBuys what he thinks of sero-bacterins or any vaccins?

Dr. A. C. King, New Orleans: Dr. DeBuys is entitled to the thanks of the Society for several things. I think the most important one is condemning the use of a plaster jacket made out of Denver mud and other things of that kind. A good many physicians use that stuff, and I never could understand why it was necessary to weight a poor six-months or one-year-old baby down with such a thing as this heavy plaster cast. I have never seen good results obtained from it except in the imagination of the doctor.

Another thing he has enlightened us on is the proper use of oxygen. In operating on a case of appendicitis or any abdominal condition, shall we wait until the last moment in order to operate and expect a good

result? Not at all. We know the earlier we take in hand a condition of that kind, the better the chance the patient has. The ordinary way of applying oxygen is in the very last stages of pneumonia, and, of course, we cannot expect a favorable result, unless we use it according to the method outlined by Dr DeBuys. Years ago, when oxygen came out first, I remember using it myself as a last resort, and the patients all died. Now we know better.

Another thing the doctor spoke of is turpentine. It is an old-fashioned remedy, but one of the best methods of counter-irritation we have at hand. Mustard is very satisfactory, but not as good as turpentine, except in the class of cases mentioned by the doctor of broncho-pneumonia, where the patients are apt to drown in their own secretion. There is a method of using mustard that is different from the mustard plaster, and in my hands has been useful. I ran across a formula some years ago; it originated in Germany, but I do not remember who got it up. However, it is a simple thing. It is nothing but the oil of mustard dissolved in alcohol, in certain proportions, and applied in the form of hot water, and the alcohol and mustard, with a piece of flannel long enough and wide enough to wrap the child from the neck down to the knees. The author of this article claims, and I have verified it in several cases in the severest type of broncho-pneumonia, that it is actually a life-saving remedy. I prefer that, in desperate cases of pneumonia of the bronchial type, to the plain mustard jacket, for the reason it is easy, but it is hard on the doctor or nurse who applies it. The oil of mustard is one of the hottest things handed down to us. It requires very quick application to save yourself from a good, lively shedding of tears. It is hard on the child and hard on the nurse, so far as the strength of the stuff is concerned, but it does the work all right.

Oiled silk jackets I used fifteen years ago with a great deal of pleasure and benefit in children. The secret of the whole thing is to keep the chest at a uniform temperature, and, as Dr. DeBuys has pointed out, that is very necessary. The best results I ever obtained were from using an oiled silk jacket in the winter, cold weather particularly, and any housewife can make them at a small cost. I have a pattern, I cut the pattern to fit, or get my wife to cut several patterns, and take one or two along with me.

The question of overmedication is an important thing the doctor has brought out, and I am glad he did so, because we are inclined to pump medicine into these little chaps with the idea that it is doing good, when it is interfering with nourishment, etc.

With reference to medication, I am glad the doctor mentioned the citrates, or alkaline treatment. I have been using in children and adults sodium citrate, and grading the dose according to the age of the child, from seven and a half up to twenty grains every two and a half hours. The doctor did not mention another feature of the citrates in addition to the medicine being alkaline, and that is this: it does lessen the coagulability of the blood. I have seen that demonstrated by Weaver, who called attention to it several years ago. It does good in these cases. It seems to cut short the disease, and oftentimes, where you expect crisis at the end of so many days, you will get a lysis, in that the temperature falls gradually, instead of putting the child in immediate danger by a sudden drop, as in crisis.

Dr. G. Farrar Patton, New Orleans: In the early days of my practice in New Orleans I was often in consultation with the elder Dr. Loeber,

first House Surgeon of the Touro Infirmary. He was a German and one of the most highly esteemed of the old-type of family physicians. His regular practice in such cases was to apply a hot pack and its advantages were very striking.

One point mentioned by Dr. DeBuys incidentally is worthy of special emphasis; and that is the unwisdom of trying to force the temperature down. I think it was the English school of clinicians who first advocated the doctrine that in essential fevers a certain range of elevated temperature is right and proper as being nature's method of checking the formation of toxins and of limiting the activity of those already present in the patient's system. Evidence of the logic of that doctrine was afforded by the disappointment that resulted from the use of the coal-tar derivatives in typhoid fever some two decades past. In the same measure some revision of modern ideas about the utility of ice-cloths and cold baths may be considered in order, as compared with tepid applications.

One final word from the point of view of one recently in the position of State Registrar of Vital Statistics. When you sign a death certificate in a case of pneumonia, always state whether it was lobar or broncho-pneumonia. In my experience of the three past years we have often had to guess at it, and it is certainly just as easy for the attending physician to write the word "lobar" or "broncho" as to omit it.

Dr. DeBuys (closing): I want to thank the members for their generous discussion. In answer to Dr. Abshire, the mortality of lobar pneumonia is very low, and it occurs in those children usually of poor resistance. The secondary type of pneumonia, broncho-pneumonia, that follows the acute infectious diseases, particularly measles and whooping-cough, lays a favorable ground for tuberculosis. Tuberculosis of the lungs in infancy and childhood is usually a tubercular broncho-pneumonia. One of the things I do not like is a poultice, particularly when there is cyanosis, because, during the cyanosis, you are apt to have cardiac or respiratory failure, and if you add something to the chest to make breathing harder it is a greater handicap to the baby. There should be counter-irritation, and the poultice is used for that purpose, but this can be produced just as well with turpentine if used pure.

I want to bring out another point in regard to the attacks of cyanosis. Early in cases of pneumonia, cyanosis is infrequent, but late in the disease it is a serious symptom.

In reply to Dr. Hamley, in giving phenacetin, I always combine it with caffeine, and have not found any unfavorable results given in that way.

Another point I did not mention about the mustard is that in using it you are apt to cause a blister, and blisters will handicap your counter-irritation.

In reply to Dr. Hirsch, cough is an evidence of some irritation in the respiratory tract, and early in the disease alkaline drugs are usually sufficient to help liquefaction and thereby lessen the cough. If the cough is more severe, I use the bromides. If the baby is restless and the cough is excessive, I might use phenacetin. Dover's powder is used in these cases sometimes.

In reply to Dr. Willis, I will say that I have been sailing along so nicely without the use of phylacogens that I have not used them. I have been benefited and have profited by the experience of my confrères who

have used them frequently with unfavorable results. I have seen it used, but the results have not been satisfactory.

Dr. Hirsch asked about the use of adrenalin. I have not had any untoward results from its use. My experience with the use of adrenalin in pneumonia has been rather limited, because, as a rule, it is not indicated in those cases I see, and it should be employed in those cases that require extreme measures. However, when I have used it, it has seemed to serve its purpose.

Dr. Tucker brought out a good point, and that is to give a dose of castor oil occasionally. I do not go so far as he does, to give it daily; I want the food to stay in the alimentary tract long enough to be assimilated, and thereby keep up the resistance of the patient. I believe a daily dose of castor oil is not a very wise thing, but an occasional dose, I think, is good.

In regard to the vaccins in lobar pneumonia, the ordinary cases do not need vaccins and the prolonged cases are vaccinating themselves all the time. In broncho-pneumonia you must determine the vaccins you are going to use. You must use vaccin to fit the germ in the case, and when you find the offending organism you might just as well make an autogenous vaccin.

I thank Dr. King for bringing out, and Dr. Patton for stressing, some of the points I made. There are many household remedies that have been used for generations, and if we look into them and see why they were used and employ them judiciously many of them would not go into disuse.

REMOVAL OF THE APPENDIX IN ABSCESS CASES.*

By HERMANN B. GESSNER, M. D., F. A. C. S., New Orleans, La.

Several years ago, influenced by the writings of Dr. Van Buren Knott, of Sioux City, Iowa, I began to make a routine removal of the appendix in abscess cases. Then, as now, it was more common for operators in New Orleans to content themselves with a simple drainage than for them to attempt the removal of the offending organ. The reasons advanced by Dr. Knott, which appealed to me, were these: The emptying of separate pockets of pus which, in simple drainage, would fail to be evacuated; the less frequency of obstruction on account of the freeing of the adherent coils; the lessening of septic absorption due to the continued presence of the diseased organ, and the abbreviation of convalescence; the avoidance of the subsequent necessity for secondary operation in from 15 to 30 per cent of cases.

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

In one of his early papers (*Jl. A. M. A.*, August 12, 1911, Vol. LVII, pp. 525, 526, 532-534) Dr. Knott gave his mortality as three cases out of 283, about 1.06 per cent. In a recent communication I am informed that, in a series now including at least 1,000 cases the mortality has not risen above 1.2 per cent. In order to leaven the results of the two types of operation in the hands of a number of different operators under practically identical conditions, I have studied the cases of appendiceal abscess in adults recorded in the Charity Hospital of New Orleans for the five years 1912-16. The records show that the cases clearly defined as appendiceal abscesses, with drainage only, numbered 92, with 17 deaths. Of these, I eliminate 12 deaths, because the end came less than a week after operation; in fact, in several cases on the following day. These cases clearly had simple drainage, because that was all they could stand at the time of operation. This elimination leaves 80 cases, with five deaths—a mortality rate of 6.2 per cent in the hands of thirty-seven operators. The cases in which the appendix was removed numbered 38, with four deaths. Of the four fatal cases, I eliminate two in which death took place within one week, and a third in which a gauze sponge three feet long was found at autopsy, one week after operation. This weeding out gives us 35 cases with one death, a mortality of 2.8 per cent in the hands of twenty-two operators, as compared with 6.2 per cent in the hands of thirty-seven operators for simple drainage. If objection be made to the elimination, then the gross mortality for simple drainage may be taken, which is 17 out of 92 cases, or 18.4 per cent for forty-two operators; the gross mortality for the appendectomies is four out of 38 cases, or 10½ per cent for twenty-five operators. Either way, the figures favor appendectomy. Furthermore, study of the periods of convalescence shows an average of 35.5 days for the drainage cases, of 33.1 days for the appendectomies. While these series are not large enough to permit the drawing of positive conclusions, so far as they go they justify the operation of appendectomy.

Giving my personal experience, I may say that, of the twenty-two operators who did appendectomies in abscess cases, I had the largest number of cases, five, among which there was no mortality. I do not claim that all cases of abscess are to be submitted to appendectomy. There are cases in which, as a result of numerous attacks, the region is surrounded by old, organized adhesions, which

make the removal of the appendix extremely difficult. In cases that are on the verge of death, drainage alone is indicated.

I believe I can best describe the condition favorable for appendectomy, and the technic adapted to it, by detailing a typical case. There was a mass in the right lower quadrant, not involving the anterior parietes. The patient has a temperature of 100° , with pulse about 90. A right pararectal incision opens the abdomen and reveals the colon fixed to the lateral wall of the abdomen. A long abdominal pack, moistened with warm saline, is placed with a long forceps so as to wall off the abscess, proceeding from above downward, on the mesial side, and ending below with a careful walling off of the pelvis. With Mayo scissors or with index finger the colon is separated from the lateral wall and foul pus released. This may be removed quickly and cleanly with a suction apparatus or with sponges on holders. Continued separation of adhesions, gently done, brings up the cecum, and the appendix is, as a rule, easily recognized; if not readily found, the systematic following of longitudinal band brings us to it without much delay. The removal of the appendix and treatment of the stump vary with the individual operator. Drainage now remains to be provided for. Here I differ with Dr. Knott, for, while he puts a split tube with gauze inlay down to the bottom of the pelvis, I use a soft rubber and gauze cigaret down to the abscess pocket as a sufficient drain, less likely to provoke ileus by adhesions than the more extensive and rigid pelvic tube.

There is one more point to touch on, and that I shall discuss briefly. At what stage of his career shall the surgeon pass from draining appendiceal abscesses to taking the appendix out of them? My own answer is that any well-trained man may safely attempt this procedure. The general practitioner of limited training, doing surgery under necessity on infrequent occasions, will likely do better by his patient if he contents himself with drainage alone.

In conclusion, let me affirm clearly my conviction that in nearly every case the appendix should be removed when an abscess caused by it is attacked.

DISCUSSION OF THE PAPER OF DR. GESSNER.

Dr. J. C. Gremillion, Alexandria: I believe the tendency is to remove more appendices as we are perfecting our technic in abdominal surgery. Of course, the proportion of appendices we remove in abscess cases depends a great deal on the time we see the cases. I believe in most

cases we see up to the fifth day the appendix ought to be removed. We get a large per cent of cases which I have named calomel appendices, because they have been purged; they have an abscess in a week or ten days; they are so firmly separated from the abdominal cavity that we never make an effort to find the appendix. They are so firmly bound down in the connective tissue. I believe practically in all cases, where the abscess is not adherent to the abdominal wall, we ought to make some effort to remove the appendix. Another point which I think is very important is that in these pus cases where we remove the appendix we should use absorbable ligatures. About nine or ten months ago we had a case in which the patient was taken with initial pains on a train in Shreveport. She landed here at night, took a dose of castor oil, and I saw her the next day. She was anxious to get back home in a few days. She did not desire an operation. So we put an ice-bag on the abdomen, and on the third day she had symptoms of perforation. We operated on her and removed the appendix and used silk. She went back to Memphis, and the silk had to be removed in six months. I have always thought that if we had used catgut it would have obviated that secondary operation.

Dr. Lucian H. Landry, New Orleans: The question of the removal of the appendix has been more or less discussed for the last four or five years, and there is no doubt that the pendulum is swinging in the direction of Dr. Gessner's remarks. I am going to incite your displeasure by referring to one case we saw at the Charity Hospital some seven years ago, which always recurs to me whenever the question of removing the appendix comes up. The man was admitted with a tense abdomen, showing clearly a large cake in the right iliac region; he was very septic and practically in extremis. All we could do was to drain; he came around, and finally walked out of the hospital. We advised him to return in three months and have the appendix removed. Ten months later he returned to the hospital in the same condition he was when first seen. He was admitted to Dr. Danna's service, who did the same thing I had done, and also advised the patient to return in a few months, when stronger, for appendectomy. Again he disregarded the advice, and, to my surprise, I ran across him in the hospital a year later in the same fix; this time he did not recover.

There is one point that struck me in connection with the removal of the appendix in these cases. We know that the cecum itself is very much infiltrated, and will not stand the line of suture as well as a normal cecum, and if you are not very careful in placing your drain a fecal fistula is liable to result. A drain should never be placed up against a suture line.

Dr. A. B. Nelson, Shreveport: I would like to add to what Dr. Landry has just said with reference to using the drain—that we use gauze, as the doctor said in his paper. If you use a tube you will be more liable to have a fecal fistula. That has been my experience.

Dr. John L. Wilson, Alexandria: I appreciate Dr. Gessner's paper very much. It is a consolation to me, for what I have been doing myself for two or three years. I read the paper of Dr. Knott, to which he alludes, and since that time I have been removing all appendices, and I have never had occasion to regret it yet. We who practice in smaller towns like this get our cases in bad shape, and I hate like smoke, when a patient comes from under an anesthetic, to tell him the appendix is still there and he will have to have another operation sooner or later.

For the past three or four years I have not failed to remove all appendices except one, and that was in the case of a doctor who is in this hall at the present time. He made me promise him, before I operated, if I found an abscess not to remove the appendix. I have been sorry to this day that I did not remove his appendix, because I think the doctor would have been better off and I would have saved a subsequent operation which he had to undergo for the removal of the appendix.

So far as drainage goes, I do not favor very large drains. I think it is unnecessary. If you remove the focus of infection, and if you fear that the peritoneum is not able to take care of what is left there, and you feel like draining, a small drain, as illustrated by Dr. Gessner, is sufficient. That has been my custom for three or four years. As I have said, I have removed every appendix except the one I have alluded to.

Dr. Scott, Alexandria: There is one thing I would like to say about these cases. I have been trying to learn for a long time how to handle those cases of appendicitis that come to us three or four or five days after an acute attack, presumably without rupture. Undoubtedly, there are some cases we see, particularly where a mass is palpable in the abdomen, where the temperature is, say, 102° or 103° , with accelerated pulse. I believe we would do well to wait a little while in such cases, because, if you get in there and stir up the protective wall of inflammatory exudate, there is further opportunity for lymphatic absorption, and you will find the patient in twelve or twenty-four hours will show a temperature of 106.7° , with marked sepsis, and these patients go out in that way. I have seen these patients put to bed and treated with rectal drip, ice pack and Fowler position, and the temperature has declined, subsequently dropping to practically normal and the pulse below 100. You can then operate these cases with less risk than if you attack them immediately. You must tide them over for a certain period of time, sometimes if only for twenty-four hours.

One thing about drainage is the question of incision. The Battle incision is probably the best where you have an acute appendix to deal with—a two- or three-day appendix—because you may want to further explore the abdomen; but where you have an abscess cavity the best approach is directly over the abscess. Traumatism is very little, and do not further contaminate the peritoneal cavity. An incision that appeals to me very much, although I have not had an opportunity to use it very much, but I have seen it used with good results, is a transverse incision, which gives you plenty of room in dealing with a frank appendix or abscess case, because you are not there for the purpose of abdominal exploration; you do not feel the gall-bladder, the stomach or duodenum. You know you have an appendix case; you make a transverse incision over the appendix; you get a nice separation of the wound edges, get plenty of room, the appendix is very accessible, and you can take it out and efficiently drain. Here, I believe, you get better drainage than through a Battle incision or through a rectus incision. You have more relaxation of the abdominal wall. If you do use a rectus incision, I believe a counter-drain is advisable, because adequate drainage through a Battle incision, with a probable wound infection, predisposes to subsequent hernia.

Dr. P. B. Salatich, New Orleans: I make it a rule to take out all suppurative appendices. About the only appendix I have not taken out was one where the appendix and two inches of the cecum were gangrenous, but otherwise I always take the appendix out. Nature is very

kind to these cases. Ninety per cent of all appendices have a tendency to go backward and to the right side. I make the Battle incision in all cases. After making the incision I put in a large retractor and pull the wound open to the right as far as I can, and then resort to gentle manipulation. In these cases your manipulation must be gentle, otherwise you might fear infecting the general cavity. If you have packed gently the sides you can go after the appendix. In closing, I use one or two or three soft rubber cigaret drains. Before I leave the cavity I swab it out with sponges and saline, and then I put in two or three of these drains, and, after I have my drains in, I put in two or three other clean sponges and remove the sponges used to pack off, and the bowels come in contact with the clean sponges, and after the first sponges are removed you can take the second layer of sponges out. I suture the fascia just as close as I can, almost strangulating the drains, to obviate any tendency to hernia.

I tried posterior drainage about five years ago, when it was a fad to put in posterior drains, but have since discarded it. Most of the drainage is anterior, and very little drainage is established posteriorly. There are few men who drain posteriorly now.

Dr. William M. Perkins, New Orleans: We all agree that the appendix should be removed at operation if we think it is safe to do so, but there is one boundary line we dare not cross, or hardly ever do we dare cross it, and that is when the appendix itself forms a part of the wall which walls off the abscess from the general cavity; it means destruction to break through that wall. I remember one case in which I allowed the appendix to stay in, in spite of the advice of my assistants and nurse and one or two doctors who were present and a reverend gentleman at the head of the hospital. They were at me for six weeks to take out that appendix, which was caught in two layers of bowel and became a part of the protection. To remove it would have made a hole in the covering. Sometimes we are in doubt whether we should take out the appendix or not. If we can possibly drive through with it, it is best to take it out.

It is astonishing what cases you can close without drainage when there is pus in the abdomen, because, if doctors had the proper amount of gratitude in their souls, they would appreciate more the *vis medicatrix naturæ* which half the time makes our reputation. It is astonishing what the peritoneum can and will do in taking care of pus. If a sloughing mass of appendix be left, it is harder for nature to attend to her work and dispose of the small amount of infection.

It is a great pity that the Murphy-Ochsner treatment of appendicitis was thrust upon the profession as a treatment for this disease before operation. It is of the greatest value in treating cases after operation, where a pus focus is in the abdomen and not completely walled off. Where you have an infected corner of the abdomen, and can restrict the infection to that locality, if you have bowel paralysis, you should give nothing by mouth, and water by rectum, and if there is absolute bowel stasis you should allow the *vis medicatrix naturæ* an opportunity to patch up and seal off that corner, that nature may sterilize that pus in the abdomen and eventually absorb the dead material. That is the time when the Murphy-Ochsner treatment comes in.

As to the favorable time for the removal of the appendix, I heard Murphy, of Chicago, Moore of Minneapolis, one of the Ochsners and one of the Mayos and one or two other men of large mental caliber say that they had been practicing medicine for a long time and did not know

definitely in some cases when it would be safe to remove the appendix, say in twenty-four hours, or let it alone. After hearing that statement I quit trying to learn, because I did not have a fair start. If those men do not know when the appendix should be taken out, or when a man should wait, I thought I would quit trying to find out and open the belly the first time opportunity offers.

Dr. Edgar Lee Sanderson, Shreveport: Dr. Gessner, in giving his statistics, did not mention the fact that those cases in which drainage alone was resorted to were the desperate cases. His statistics would tend to show that the immediate danger from drainage is greater than it would be to remove the appendix. I take it only the desperate cases in the Charity Hospital are drained and the appendix not removed. A great many of them were moribund, and if you open the abdomen you are giving them some chance. However, I am not an advocate of leaving the appendix in. I never left it in but once, and that patient was sent to the hospital later for a secondary operation.

In regard to drainage, the important thing is to shut off any drainage other than the outlet of the pus. The drain should give a perfectly free outlet for pus, and should be sufficiently irritating to produce a flow of serum. The doctor who has just discussed war surgery [Dr. Ney] mentioned exosmosis, which the hypertonic solution produces. My method in treating an appendiceal abscess is to make the Battle incision, pack off gently the surrounding cavity, separating the tissues, and allowing the pus to escape. I put a spoonful or two of equal parts of alcohol and iodine in the cavity while removing the appendix. Your abscess cavity will be saturated with the mixture of pus, alcohol and iodine. It is not used for its antiseptic effect at all, but its slightly irritating effect produces an exosmosis of serum. Where I suspect a recent infection in which the patient has not had a drop in temperature, I saturate a sponge with iodine, squeeze it out and insert it down into the pus cavity, for the same reason that it is sufficiently irritating to produce an excessive flow of serum.

In regard to rubber drainage tubes and cigaret drains, I do not think they are near so efficient as a plain gauze drain, for the reason that, first, the flow of pus cannot get into them except at the mere extremity, and these drains often become clogged and do not drain. I use wicks of gauze—small sponges stretched out, deep down to every part of the pus cavity, and coming out on the surface. But I do not allow these drains to remain longer than twenty-four hours. At the end of that time I remove all drains except the one that goes right down to the focus of infection. Then I remove it, if it is loose, but if it is adherent I do not remove it until the following day.

Dr. A. C. King, New Orleans: I am not able to add to the various discussions regarding the abscess part of the subject, but what I would like to know is this: What is the matter with our diagnosis in this class of cases? Where does the average doctor come in on the diagnosis of appendicitis? I mean, by that, this: We have had appendiceal abscesses ever since the year one, and we probably will keep on having them, for the reason that a mistake has been made by some one, either the ignorant patient, who does not call in a physician early enough, or it is the hard-headed doctor who has not systematized his method of abdominal examination. Oftentimes you ask a patient to put one finger on the point of pain, and he says, "My pain is here," covering the abdomen with both hands. It is very essential for us to learn to systematize our

methods of abdominal examination in order to make a correct diagnosis. We should take the abdomen as a whole and try to make a diagnosis of one thing at a time. After making as many mistakes as anybody else, I decided to systematize abdominal examination, taking one organ at a time and examining it, studying it from a pathologic standpoint and studying the symptoms of that organ when it is giving trouble. If some of the symptoms overlap, if you have various and sundry signs at your finger tips, you can use the overlapping symptoms in clearing up the diagnosis.

Let us take acute appendicitis. We know that two of the most usual complicating conditions are kidney-stone including stone in the pelvis, and gall-stones. That produces symptoms which overlap the symptoms of appendicitis. We oftentimes make mistakes. I recall a case of stone in the pelvis of the kidney operated in one of the hospitals in Texas for appendicitis, and the trouble kept up as before, until the X-ray was used, a diagnosis made and the stone removed. I also remember an ovary that was taken out in our clinic at the hospital, that gave us the symptoms of acute appendicitis, but we forgot the fact that there was no temperature and there was no leukocytosis, hence the mistake in diagnosis. If we remember the five cardinal principles in appendicitis in their natural order, and then add to these the Meltzer sign, we ought not to make a mistake. In this case we found the ovary was pulled up in the neighborhood of the appendix and attached to the right side by a broad band of adhesions. We made a mistake, and it was not excusable, either. I do not try to excuse mistakes of that kind. However, the patient got well.

It seems to me the trouble is the general practitioner and the men who have had a limited amount of observation of cases fail to put system into their work. In teaching in the Polyclinic in New Orleans I try to make this impression, especially in regard to fractures and dislocations, and things of that kind. I can take an illustrative case; for instance, a Pott's fracture, and try to get into the heads of the class the importance of systematizing their work and learning all about joints from the standpoint of one fracture or one type of dislocation. Then they have a starting point; they go right along and have no trouble in diagnosing any pathologic condition about the joints. It is the same way with the abdomen. If we had more system and educated patients along the line of sending for a doctor on the least attack of pain in the right iliac region we would save ourselves trouble and the humiliation of being called after abscess formation.

Dr. Gessner (closing): I am going to set an example by sticking to the subject of the removal of the appendix in abscess cases. Some of the points made were very valuable; one of them was with reference to the time when the abscess is seen. I do not think there is any doubt that the cases seen early are much more amenable to radical operation than those that are seen late.

In regard to the matter of adhesions to the anterior abdominal wall, I think, in cases of this kind, a good plan is to get into known territory first, to make an incision above the abscess, get into clean peritoneum, pack all around, and then deal with the appendix by breaking up adhesions, separating coils of intestine and taking out the appendix. I cannot agree with my friend, Dr. Perkins, that it is destruction to break through the wall of the abscess, if you put a good pack all around and protect the patient from leakage of pus. I am not so sure that, if you

did no packing at all and allowed some of the pus to escape, any trouble would follow. Coils of intestines in this neighborhood have shown their ability to wall off, to have an adhesive inflammation, and I am not quite sure, if you have no packing whatever, a little leakage of pus would make much difference. In regard to the absorbable ligature, it is our practice to use a catgut ligature for the mesentery. So far as dealing with the stump is concerned, that is done with linen, and we have had no bad results from using linen for burying the stump of the appendix.

As to fecal fistula, a rigid cecum would not stand sutures very well. There is a technic for taking off the appendix which ought to be more frequently used than it is in cases of this kind, in short and thick, heavy appendices—that is, the amputation method, making a cuff of the sero-muscular coat, stripping it down and tying off the mucous coat separately, then bringing the cuff forward over the mucous stump. A rigid drainage tube is much more apt to cause fistula and cause adhesions than a soft tube. A rigid tube introduced into the pelvis helps to produce adhesions which may cause ileus.

A transverse incision has no advantage over the Battle or para-rectal incision. Counter-drains I have not used.

As to drainage alone being resorted to in moribund cases, I think I made it clear that I eliminated these moribund cases by eliminating all those that died under seven days.

HODGKIN'S DISEASE, WITH REPORT OF AN APPARENTLY CURED CASE.*

By D. O. WILLIS, M. D., Leesville, La.

In presenting this subject of Hodgkin's disease, I do not propose to go into the subject fully from the various phases. Time would not permit it if I were so inclined, but the main object I have in view is to put before this Society the fact that we at last have some hope from a treatment standpoint.

This disease was first pointed out, as you all know, by Hodgkin about 1872, and has since been recognized by his name. Many other names have been suggested, but still it is most commonly spoken of as Hodgkin's disease. Until recently a fatality of 100 per cent was generally accepted, and is possibly so accepted by a majority of the profession at present.

It has been held by a large majority of investigators and observers that this disease was of malign inflammatory character, some holding, however, that it was of neoplastic character. The opinion of Yates and Bunting is that it partakes of the potentialities of

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both. There is such great difference in the appearance of this disease at different stages that it has been necessary to classify it at different stages, and it seems that this has been done best by Trousseau, many years ago, into three stages, namely: First, the latent stage, extending from the beginning to the progressive stage. Second, the progressive stage, extending from the latent stage to the cachectic stage, in which multiple, more or less widely separated, groups of glands become involved so suddenly at times as to be termed explosive, but usually occurring gradually and ending after correspondingly variable intervals in the final or cachectic stage. Third, the cachectic stage, in which the peculiar progressive pallor and other signs of increasing physical and physiological debility indicate that physical resistance has been completely overcome.

The case upon which my experience has been based, which case I expected to present here to-day, is that of my own son. His family history was negative. Personal history: Age, twenty years at present; was fine, healthy child to age four, at which time he was vaccinated; had bad sore from vaccination and had iodine poisoning from the use of iodoform used in the treatment of the sore. After this he had some enlargement of cervical glands, was pale and anemic, but yielded to treatment and soon recovered, grew and seemed normal, until during the winter and spring of 1914 and 1915, at which time he lost some weight and complained of his limbs and bones hurting him; had light fever at times. At that time his cervical glands showed enlargement and I found, about February, 1915, that he had some enlargement of the axillary and inguinal glands. I treated him without results. On April 2, 1915, I carried him to Shreveport, had one gland removed from the right groin. Dr. Ellis reported to me on April 5 that the pathological picture was that of Hodgkin's disease. I carried him to New Orleans, had the same diagnosis by Dr. Wade at the Charity Hospital, by the same method, with glands removed from the right axilla, also confirmed by Dr. J. B. Elliott, Jr., from a study of the blood and the history of the case in general.

I found no encouragement anywhere; investigators had gotten no permanent results from treatment by X-rays, climate or from any medication, salvarsan included.

I finally carried him to Drs. Yates, of Milwaukee, and Bunting, of Madison, with but little encouragement and practically without hope. They had nothing in literature at that time on the subject,

and practically nothing until very recently. Since I began the preparation of this paper Dr. Yates has an article in the *J. A. M. A.* (March 10, 1917, page 147) setting forth some of their work. It was my privilege to be intimately in touch with their work for a period of several weeks during the summer and fall of 1915.

One point for which there is no claim made by Dr. Yates' paper, or in any other way that I have seen by them, that I was very favorably impressed with, is the causative factor, because I suppose they cannot produce irrefutable and provable evidence on this point. They do not make any claim at all, but Dr. Bunting, working on the theory of the diphtheroid bacillus as the causative factor, has produced changes in guinea-pigs similar to that of Hodgkin's disease, and most assuredly the injection of their immunized horse serum (the immunizing being done with this particular type of bacteria) does materially affect patients suffering with Hodgkin's disease in a way that it does not affect other patients, and, no matter what they think, I am fully convinced that my son owes his recovery (if recovered he has) partly or very largely to the effect of this serum, because they only removed part of the enlarged glands, only removing the inguinal glands and depending on the serum and X-ray treatment for axillary and cervical regions. This course was followed at my request, and my request was made thus—after I was so thoroughly satisfied as to the beneficial effects of the serum, after having observed its use on other patients, that I was willing to take the chance on my own son.

Their general plan of treatment consists in the removal of any possible source of constant infection, as defective teeth, infected tonsils, sinuses, etc.; the complete radical surgical removal of all accessible involved tissues; X-ray exposures of all involved parts, with a heavy type of filtered rays, and the intravenous use of their immunized horse serum.

They have treated about sixty-five cases, and while they do not make much claims as to cures, quite a number of their patients I had occasion to see and examine and observe on different occasions gave no evidence of the disease whatever; clinically they are surely well.

One point I would forewarn you of and impress on you, do not make the mistake we did on this patient, namely: to remove a gland for examination or in any way disturb the infected areas, except by complete removal of all involved tissues. Yates considers this is

absolutely dangerous, and I know it produced a bad result on my son, after the removal of each of these glands on different dates from different points by different parties. On each occasion the adjacent glands became very much enlarged and his blood change was marked. If you are in doubt as to the diagnosis, and should want the assistance of Dr. Bunting, all you need is to make about one dozen medium-sized cover-glass light blood smears and send to Dr. C. H. Bunting at Madison, Wis.

BLOOD COUNTS IN CASE OF MY SON.

Dates.	Neut.	Eos.	Bas.	S. L.	L. L.	L. M.	Trans.
8/ 9/15.	49.0	10.0	2.0	29.0	1.0	0.0	9.0
8/28/15.	40.0	18.6	0.3	24.6	1.6	0.0	14.0
10/26/15.	81.0	4.5	1.0	5.5	0.0	0.0	8.0
2/10/16.	53.0	15.0	1.6	17.6	1.0	0.0	11.6
4/ 1/16.	57.75	10.75	0.5	22.0	1.0	0.0	8.0
6/ 1/16.	54.22	10.14	0.5	26.2	1.0	0.0	7.0
8/ 1/16.	54.2	10.4	0.0	30.2	0.2	0.0	5.0
3/20/17.	61.0	6.0	0.0	25.4	0.4	0.0	7.2

CLASSIFICATION OF CASES.

All Cases, 63..	{	Acute Cases, 5		Group 1, 5 Cases.	
	{	Stage 1, 8.....	{	Early.....	{ Group 2, 5 Cases.
				Late.....	{ Group 3, 3 Cases.
		Stage 2, 25.....	{	Early.....	{ Group 4, 11 Cases.
				Late.....	{ Group 5, 14 Cases.
		Stage 3, 25.....	{	Early.....	{ Group 6, 14 Cases.
				Late.....	{ Group 7, 11 Cases.
		{	Chronic Cases, 58.		

RESULTS OF TREATMENT BY GROUPS, AS TREATED BY YATES
AND BUNTING.**Group 1.** Acute cases; five.

Four patients died in from one to four months; one primary retroperitoneal was discovered post-mortem; the other three (two primary cervical and one primary mediastinal) were subjected to various treatments without checking the process. One case, primary cervical, has assumed a chronic type, following tonsillectomy, extraction and treatment of teeth, multiple excisions and réexcisions, serum and Röntgen ray. Temporarily this patient is very much improved and is still improving. Recovery is conceivable.

Estimated possibility of recovery, less than five per cent.

Group 2. Incipient cases; five.

Two patients recovered, five years and over.

Two cases probable recovery, two years and over.

One case apparent recovery. In this patient the disease was limited to a nodule in one tonsil. Several months after tonsillectomy and Röntgen ray exposures of the neck, symptoms suggesting extra-medullary pressure on the tenth to the twelfth thoracic spinal segments developed. Relief finally followed serum administration and Röntgen ray treatment of spine.

Estimated possibility of recovery, from 80 to 90 per cent.

Group 3. Early cases; three.

One patient probably recovered. This patient has been under treatment eight years. His blood picture has never returned to normal, and probably never will, but it is conceivable that the disease was eradicated five years ago.

One patient temporarily recovered.

One patient refused operation, and was treated elsewhere with vaccin and the Röntgen ray. Dead.

Estimated possibility of recovery, from 60 to 70 per cent.

Group 4. Moderately advanced cases; eleven.

Two patients, recovery probable. Improvement during the past five years indicates that the disease is all but overcome.

One patient probably recovered.

One patient apparently recovered.

Five patients temporarily relieved; one of these now shows hopeless involvement.

One patient refused treatment.

One case, primary incomplete excision done elsewhere without previous tonsillectomy. Tonsillectomy; vaccin and Röntgen ray given, followed in a few months by a sudden recrudescence in an acute form. This was attributed, possibly unjustly, to the vaccin.

Estimated possibility of recovery, from 30 to 40 per cent.

Group 5. Advanced cases; 14.

One patient probably recovered; case once appeared hopeless.

Three cases temporarily improved.

Three patients refused treatment; two dead, one dying.

Three cases are in terminal stages. All these patients refused intervention at a critical period, when nothing less would benefit.

Two patients are dead; both were temporarily benefited, one (mentioned above) so greatly improved as to raise hopes of recovery.

One patient has been subjected recently to an incomplete operation elsewhere.

One patient succumbed to operation.

Estimated possibility of recovery, from 5 to 10 per cent.

Group 6. Very late cases, palliation still possible; fourteen.

Three patients declined to begin treatment. All are dead.

Three patients refused to continue treatment. One dead, two dying.

Four patients survived but a few (from eight to twelve) weeks. All were temporarily improved and for a time appeared to gain. This type, without reserve power, would be subjected to no treatment were it possible to estimate actual conditions.

Three patients have had from three to twelve months of hope and comfort; two are still active and optimistic. Two of these appeared to be weaker than three of the preceding four patients who responded less.

One patient died during operation.
Estimated mortality, 100 per cent.

Group 7. Lethally involved cases; eleven.

As above stated, this would be the largest group if it included those who have consulted by letter.

Two palliative operations were attempted—one, a mediastinal decompression, which was never begun, as the patient died during the induction of anesthesia; the other, an axillary decompression, which was very gratifying in its relief.

This group included at least two primary mediastinal cases.
Mortality, 100 per cent.

In conclusion, I will say that I am perfectly satisfied that my son is entirely well, as he seems so perfectly well and gives no evidence whatever of the disease, and his blood has been normal and showed no evidence at all of Hodgkin's disease since April 1, 1916, just one year now, and while they have set a period of five years, with a normal blood picture and normal in every other way as a standard for a cured patient, I am satisfied that my patient will not need more treatment.

DISCUSSION OF THE PAPER OF DR. WILLIS.

Dr. J. B. Elliott, Jr., New Orleans: On examining the Charity Hospital records for the last five years, I find thirteen cases reported as Hodgkin's disease. I do not know how many more there were. Of this number, three died, six were discharged improved, four discharged as stationary, none discharged as apparently cured.

Dr. Weis, at Touro Infirmary, in private and public wards, had seen sixteen cases. Of this number, fourteen are dead, two were discharged as stationary, after being there for quite a length of time.

What I would like to bring out in connection with this subject is the question of the early diagnostic symptoms and signs. First of all, unilateral enlargement of the glands at the neck, not adherent, movable, is important. These glands are never adherent to the underlying structures; they do not suppurate, as tuberculous glands would.

A second point I have learned in the last few months, and one which I have never observed personally at all, concerns pruritus. Some of the recent writers state that positive cases of Hodgkin's disease always have pruritus, and it is intensely aggravated by perspiration. If this is true, it is helpful in the diagnosis.

A third point is intermittent fever, called the Pel-Ebstein syndrome. That is an important thing, where you get a patient with enlarged glands of the neck. The patient has a temperature of 103°-104° running for ten days, and then normal for two weeks. Osler reports such a case. The Pel-Ebstein syndrome points to infection, as it causes a high rise of temperature.

Another important point is the constant increase in the leucocyte count. In examining my records for the past five years I have only found two cases. Dr. Willis has seen one that is living near Alexandria.

This patient has been sick for two years. She was practically cured, or we thought so, as the temperature gradually went down. I have not examined the thoracic glands in such cases with the X-ray, but I never regard such cases as cured if I can prove enlargement of those glands. I want this enlargement to disappear before my case is called cured.

As to the differential diagnosis, leukemia is ruled out by blood count. We have had in New Orleans this winter a man with the typical appearance of Hodgkin's disease, but with a high leucocyte count and enlarged spleen, and proved to be one of lymphatic leukemia. In another clinic he was advised to have all his teeth removed, thinking the teeth may have been the cause of the infection or of the lymphatic leukemia. We do not know positively the cause of either Hodgkin's disease or leukemia.

In leukemia we have a tendency of (a) the glands to coalesce; (b) fever is more regular; (c) absence of the Pel-Ebstein syndrome; (d) absence of eosinophilia. The only way we make an accurate and true diagnosis is to take out the glands and have them examined microscopically.

As regards the bacillus they claim to have found, Drs. Harris and Wade were the first in New Orleans to prove that the bacillus of Bunting and Yates was not the true cause of Hodgkin's disease. Later on, other men corroborated their views.

As regards the cured cases, I could only find in the literature of the last several years five cases reported as apparently having been cured. Bunting and Yates report three. I mean the patients have been well symptomatically for a period of over five years.

Coley reports one patient cured by the use of the Coley toxin. A Russian authority reports also one patient well after a period of seven years. Therefore, at the present time, if I see a case which has not recurred for a period of seven years I would be inclined to think I had made a mistake in the diagnosis. I must take that stand at present.

In every case of Hodgkin's disease I advise the immediate use of the X-ray.

Dr. William H. Harris, New Orleans: I hesitate to say anything, except to refer to the etiology and pathology of different lesions.

I have been very much interested in listening to the paper of Dr. Willis. He has been on a visit to the men who are foremost in this country in the study of lesions of Hodgkin's disease, and in the matter of their cause and cure. Dr. Bunting is a laboratory man, a Johns Hopkins man, and a splendid type of laboratory worker; while Dr. Yates is more of a surgeon, who lives at Milwaukee. These men have worked faithfully and very long upon the etiology of Hodgkin's disease, and the status of their work at present is *sub judice*. Let us hope that their work may lead us to something of which Dr. Willis seems to be already satisfied, and I hope we shall experience the same faith in due time that he has in the work of these men.

As regards the cause of Hodgkin's disease, two different views of the subject have been expressed. One is the question of its being neoplastic, or of tumor origin, just like the leukemias, whether myelogenous or lymphatic, just like Banti's disease, or the type of the splenomegaly, and so on down the line.

Regarding the tumor origin of Hodgkin's disease and of Banti's disease, I will say that the lesions found have given rise to no true metastases in the blood stream, whereas in the instance of lymphatic leukemia and myelogenous leukemia we have a true tumor metastasis

of the cells in the blood stream with which, of course, you are familiar, the lymphatic showing 90,000 to 150,000 or more; the myelogenous leukemia running as high as a million white blood cells, instead of normally 5,000. Various workers have contended, like Mallory and others, that these tumors are of the lympho-blastoma type, whereas the myelogenous leukemia is of the myelo-blastic type. That theory is not only well established for the time being, but practical experiments all point in its favor.

The organism claimed to be the cause of Hodgkin's disease was discovered long ago in the tissues by Negri, Mallory and others. They had never been able to cultivate the particular organism before. Just why, I do not know. Bunting and Yates sometime ago came out with the cultivation of a diphtheroid organism from the spleen and glands of Hodgkin's disease. They stirred up a great deal of laboratory work. Laboratory workers proceeded to go back and see whether they could obtain the same results or not. Numerous workers have reported cultivation of this diphtheroid bacillus from other conditions like tubercular glands. Tissue has been sent from the operating room, like ordinary fibroids, and cultivated. Tissue has also been taken from the glands and from a good many other areas and cultivated. However, that does not mean that the diphtheroid organism that has been cultivated is identical with the diphtheroid organism that has been cultivated by Bunting and Yates. We are simply going back again and attempting to bring out some of the work which would indicate that the diphtheroid bacillus is ubiquitous, that it is widespread, and not, as we thought in past times, that it is only occasionally met with. The fact is they get diphtheroids that look something out of the ordinary, like a filterable virus or ultra-microscopic organism, and it, therefore, must be the cause. Subsequent work has been aimed to show the bacilli themselves of the common kind are widespread, and in drawing a conclusion from these findings we must be conservative. Diphtheroid bacilli were claimed for a long time to be the cause of general paresis. Diphtheroid bacilli have been said to be the cause of leprosy, so that all of the main work has been done to show that we must be cautious in this matter.

As Dr. Willis has said, the main factor between Bunting and Yates is the generalized production of this lesion. They have been able to produce locally in the monkey, at this site of the lesion in the cord, the same lesions, but the same thing can be done by killed acid-fast bacilli. So I would suggest that we hold our opinions *sub judice* and allow the results, which will come in due time, to govern us. We ought not to be convinced until we have enough evidence to be convinced, and I sincerely hope that in no way will we discountenance the work of Dr. Bunting and Dr. Yates in the article Dr. Wade and myself have written. We have brought out in connection with the bacteriology the feature that these diphtheroids are widespread.

Dr. Adolph Henriques, New Orleans: Reference was made in the paper of Dr. Willis to the X-ray in the treatment of Hodgkin's disease. The work I have done in connection with this disease has been rather limited, and I hardly feel qualified to speak authoritatively on that phase of the subject. But I would caution any one in Hodgkin's disease, especially in advanced cases, against heavy doses of X-ray with the Coolidge tube, starting in with a heavy dose at once. I know of at least one case in which the end seemed to be hastened by the too enthusiastic application of X-rays to that particular case. The patient died shortly

after the application; whether it was a coincidence or some pathologic feature, to be disclosed only at post-mortem, I do not know. Nevertheless it happened.

The question of infection in Hodgkin's disease is interesting. With reference to leukemia, in the last three cases of leukemia which I treated, two acute and the other chronic, there were evidences of infection about the roots of the teeth. One of the cases I treated for quite a while. Dr. Elliott insisted that the X-ray helped in this case. Possibly it did, but I believe that woman lived longer after the extraction of certain teeth, which showed decided evidences of erosion at the roots, than she otherwise would have done. There was undoubtedly considerable absorption from these particular foci, and the X-ray played a smaller part, to my mind, than the removal of those teeth.

Dr. Willis (closing): In reference to some of the remarks made by Dr. Elliott, I will say that he goes back and denies his own diagnosis, which is backed up by the diagnosis of numerous other men. I do not think that is quite fair to the man who is doing the work. Whenever a diagnosis has been made by half a dozen or more of the best men in the country, and that diagnosis is positive from blood counts and examination of the pathologic tissue, and everything else, we ought to accept it, no matter what the result may be.

Dr. Yates has a patient who has been well, apparently, for nine years. He did not say anything about this case in his article, more than to report him cured. I saw the boy, examined him, and he was apparently perfectly well, and had been from a few months after they began treating him.

As to the remarks of Dr. Harris concerning the diphtheroid bacillus, I would say this in justification of what I have already said, namely: Dr. Yates and Dr. Bunting have not made much claim on this particular point. I have claimed more for them than they have claimed themselves. I am possibly a little overenthusiastic in making such claims, and whenever one of your own sons shows up with Hodgkin's disease and he gets well, you are going to be overenthusiastic, too.

Dr. Bunting, in doing this pathologic work, does recognize different types and strains of the diphtheroid bacillus. They are very strong on that. When I was there, in the place of using the serum taken from one horse or the serum collected from one horse to treat all cases of Hodgkin's disease, they were immunizing five different horses with five different strains of the diphtheroid bacillus, coming from five different types of Hodgkin's disease, and they were then beginning the treatment of a particular type of Hodgkin's disease with the serum from the horse immunized by that particular type of diphtheroid bacillus that belonged to that type of Hodgkin's disease.

Just a word in reference to the remarks of Dr. Henriques. I would like to explain the position they place the patient in to make an X-ray of the thoracic glands. Dr. Henriques took an X-ray photograph of my boy in New Orleans. He took it antero-posteriorly. It is not an X-ray specialist that does this work for Dr. Yates, but an orthopedic surgeon who has developed the particular position to get the patient in to get a good picture of the thoracic glands. He can show them up earlier, and where they are enlarged they will certainly show. He places the patient on the left side and focuses the rays at just a little in front of the point of scapula, ranging it to the front.

As to the modesty of their work and their determination to win out,

if possible, I think they are certainly entitled to every consideration that we can give them. I have spent weeks with these men, have watched their work, examined their patients daily, and have watched the different types of treatment. Dr. Yates has taken this horse serum and injected it into a normal man; then, in the next few days, has taken the blood from the patient and sent it to Dr. Bunting without his having any knowledge of what he was hunting for; he could make a diagnosis of Hodgkin's disease, because of the effects of that serum on the blood. After a time that would clear up and he would make a normal blood count in the same patient.

These men are not making any bold claims; they are working hard, and I commend them to any of you if you are in trouble about Hodgkin's disease. If anybody can help you, it is my opinion they can.

THE LABORATORY A CONTRIBUTORY AID IN THE CARE OF PNEUMONIA.*

By J. C. COLE, M. D., New Orleans, La.

Necessary to a clear understanding of the acute infectious diseases, as regards prophylaxis and treatment, is a knowledge of their causation and modes of transmission. Gradually, the result of the work of scientific investigators, the number of infectious diseases whose causative agents and modes of transmission were not known, we are able to recognize diseases, in a great many apply specific remedies and prevent their spread more or less successfully.

Among many other reasons why frank lobar pneumonia is of more than passing interest to doctors is its prevalence at certain seasons, its high mortality, claiming more victims than tuberculosis, its clear-cut clinical picture, making its diagnosis easy at the hands of clinicians, and the utter helplessness the doctor feels when called upon to treat a case.

Few physicians, indeed, but have the greatest respect for lobar pneumonia; no layman but fears an attack of the "old man's friend." As many doctors as there are who treat pneumonia, there are as many different methods of treatment, all aiming at making the patient comfortable, not one offering any suggestion or holding out any hope of curtailing the period of illness. Text-book writers seem to take great pleasure in describing pneumonia as a self-limited disease, and until comparatively recently no practical sugges-

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tions were offered looking to the prophylaxis and curative treatment.

Laboratory workers have for a long time recognized an organism thought to be specific in lobar pneumonia; in fact, we are able to demonstrate the pneumococcus in the sputum, in the lung tissue and in the blood of every frank lobar pneumonia. Vaccins have been prepared from this recognized organism, and cases treated, resulting in no apparent value as a curative agent. In recent years scientific laboratory men have worked out new and interesting facts about the bacteriology of pneumonia.

Instead of holding the pneumococcus, commonly found in every pneumonia, and very frequently in the secretions from the mouths of normal individuals, responsible for lobar pneumonia, we are taught that there are four strains or types of pneumococci, each specific, with varied pathogenicity. Cole, of the Rockefeller Institute, holds that about 75 per cent of cases of acute lobar pneumonia are caused by pneumococci of types 1, 2 and 3, the remaining 25 per cent by a number of strains which he designates as No. 4. He also produces statistics to show that about 30 per cent of cases of pneumonia and one-third of the total deaths are caused by infections with type No. 1.

Now, the very fact that we are able to render animals immune by repeated doses of pneumococci, and by transferring the serum from these immunized animals to non-infected animals, thereby establishing an immunity, it stands to reason that infected animals, if treated with an immune serum, would show evidences of improvement and a cure hastened. While this method of treatment of pneumonia is practicable only in hospitals and places convenient to laboratory facilities, it is probably the beginning of a scientific method for caring for a serious illness from which more practical methods may naturally follow.

I suggest that laboratories and hospitals keep in stock animals immunized against the recognized strains of pneumococci, and, upon the admission of a patient with a diagnosis of pneumonia, the specific organism be isolated, through cultural methods, and agglutinated with the serum from the animal immunized against the specific type, thereby double-checking the diagnosis of the offending organism. The organism can be cultivated and the agglutination completed in not more than twenty-four hours from the time of the patient's admission. Immediately upon recognizing the type

of the pneumococcus, serum from this specific type is introduced. Cole recommends that 80 c. c. of serum, with an equal amount of salt solution, be introduced intravenously every twelve hours till improvement is noted. Nor do I discount recognized methods for caring for pneumonia, as regards stimulation, nourishment and relief of pain, but offer the serum treatment as a possible specific, more about which we hope to learn. It will be further necessary that hospitals keep on hand a supply of serum immunized against the four different types of pneumococci.

Notwithstanding the clear clinical picture usually seen in acute lobar pneumonias, the laboratory is of further valuable aid to the clinician. The pneumococcus, of whatever strain, is classed as a pyogenic organism, and a differential and a total leucocyte count will be particularly helpful. Just as an accurate and regularly kept chart of temperature, pulse and respiration is necessary, that the attending physician may know something of the progress and general condition of the patient, a blood-picture chart is of inestimable value in interpreting symptoms and serves as a guide to possible complications, particularly empyema, a common one. In order that such a chart prove of interest and value, a differential and total leucocyte count should be made every thirty-six hours at least, from the beginning of the infection. So frequently it happens toward the tenth or twelfth day of illness, it may be following a typical crisis or not; the patient does not seem to be showing evidences of improvement we would like, or it may be that convalescence is slow and unsatisfactory. The doctor very probably suspects some complication; fearing, perhaps, an empyema, asks for a blood picture, which differs little, if any, from the one made early in the illness, and, as a result, of no assistance to him or to the surgeon who may have been called in consultation. Now, the laboratory offers a means by which such annoying circumstances may be, in part at least, obviated. A differential and total leucocyte count should be made upon admission, and every thirty-six hours thereafter, properly charted and preserved, when we have at hand an index to our patient's infection—something of an idea of his resistance—and are prepared to interpret the symptoms of a possible complication.

The serum treatment should be attempted only in institutions properly equipped, where diagnoses can be accurately made and specific treatment applied, while the general practitioner, with a

little knowledge of blood work, can keep an intelligent and valuable leucocyte chart. The one offers, as yet, little aid for the doctor remote from institutions and laboratory facilities; the other will prove an invaluable asset in the hands of doctors not necessarily skilled in laboratory technic.

DISCUSSION ON THE PAPER OF DR. COLE.

Dr. A. A. Herold, Shreveport: My attention was first called to these very different strains or types of pneumococci last fall in Philadelphia, at which time one of the aurists there was unfortunate enough to have a case of mastoiditis develop meningitis, from which the pneumococcus was isolated. He had the specific strain or type determined, and he used a serum just as we would use the Flexner serum in a specific meningococci meningitis. It looked as though he got a beautiful result. The patient improved, but when I wrote him subsequently I found that the patient had died.

As I understand from the work done, there has been a specific serum obtained for types 1 and 2. Type 3, which is comparatively rare, is the most virulent type, and nothing definite has been done on that score. It was formerly called the streptococcus-mucosus, and now the pneumococcus-mucosus. It is one in which we get a thick mucoid expectoration. The fourth type is a mild type; it is the homologous type. There are a number of organisms in that type, and very little or nothing has been accomplished with vaccins. It is the one organism, by the way, which is commonly found in mouths during the winter time, when there is no specific epidemic.

To revert to the subject of Dr. Cole's paper. This is one instance, it seems, from the work done at the Rockefeller Institute, where specificity counts. In experimentation upon animals inoculated with one type of organism, the use of a serum derived from another type has not been effectual. Type 2 usually has yielded most brilliant results.

Dr. T. J. Dimitry, New Orleans: I would like to ask the essayist if, in these pneumonia cases, he has ever tried ethyl-hydrocuprein (optochin). In ulcers of the cornea, in which we find the pneumococci as the cause, and in which we get no results other than with ethyl-hydrocuprein, it is a specific to the pneumococci in the eye. I would like to know the experience of the essayist in the use of this agent, and what opinion he holds as regards its virtue in pneumonia.

Dr. Foster M. Johns, New Orleans: I want to emphasize particularly one point brought out by Dr. Cole's paper. We all see and treat and come in contact with a great many cases of pneumonia, many of which we can help. A short time ago Dr. Bass was very ill with pneumonia. When the seventh day arrived we were all looking one way or the other. Needless to say, three of the most eminent local specialists in internal medicine were engaged on the case, and for four days the diagnosis was somewhat doubtful. There was some doubt as to whether there was an empyema or delayed resolution, and the whole clinical picture depended on one thing—a daily total leukocyte count. The leukocyte count made on that day or the next day, or the next day, had absolutely no bearing, because for four or five days it was not included. A daily leukocyte count in these cases is bad from a prognostic standpoint.

Dr. Scott, Alexandria: I would like to ask one question regarding the treatment of the pneumonias. There are a great many drug-supply laboratories who are putting out so-called specific serums and vaccins for pneumonias, prepared with different strains of pneumococci. I would like to know the value of these stock preparations. Of course, we can all use in some cases autogenous vaccins, with some benefit perhaps, but what good are the vaccins we buy from drug stores? I would like to know something about the clinical aspect, if these have been used.

Dr. William H. Harris, New Orleans: I just want to make a slight correction in what Dr. Cole has said. I do not advocate a pneumococcus vaccin in the treatment of the acute condition of lobar pneumonia *per se*. I have stated, with reference to the question of empyema, that we are following those conditions where surgical interference has been accomplished and where the patient is bordering along in such a way to see whether he is going to get well or not. In other words, if, after three or four or five weeks, the symptoms are not improved in these cases, then I feel that vaccins are in order.

As a matter of therapy of lobar pneumonia proper, there is no doubt serums are indicated to get into the circulation. That part is well worth while.

I have had a good deal of experience with cases of empyema that have been operated on. In one particular case the infection persisted for a long time. The patient was a woman who was operated on twice by Prof. Matas, and two different pockets of pus located. An autogenous vaccin was made from the pus, and, although she went along in a low-grade stage and developed phlegmasia alba dolens, the vaccin was the stimulation necessary to turn the balance as regards the question of immunity, in a sense, or the question of death.

Dr. Cole (closing): In reply to Dr. Dimitry, I can only say that I have had no experience with such an infection as he mentioned, and I am not prepared to enlighten him on the subject.

In regard to Dr. Scott's query as to what results we get from the use of vaccins that are on the market, I mentioned in my paper that vaccins made from the ordinary pneumococcus, as usually recognized, and which were formerly thought to be responsible for pneumonia, are of no value whatever in a curative way.

Dr. Harris holds that pneumococci, if prepared from the specific organisms isolated from the case, probably give, in his opinion, good results. My experience has been that it does no harm; I have seen no improvement as the result of vaccins used in that fashion. The so-called polyvalent vaccins, made up of different strains, are absolutely useless, and while perhaps they serve no bad purpose in that they do no active injury, I do not believe they facilitate or hasten the cure in a case of pneumonia.

THE IMPORTANCE OF EARLY DIAGNOSIS IN MENTAL DISORDERS.*

By ROY M. VAN WART, M. D., New Orleans, La.

A study of the early history of medicine shows that, in most instances, diseases passed unrecognized as such until they reached the final stages. As our knowledge increased, symptoms which led to earlier diagnosis were observed, but it was only after many years of close observation that we commenced to recognize disease in its incipency, and there are yet many conditions concerning the earlier stages of which we know comparatively nothing. Perhaps the best example of the development of our knowledge is seen in the history of pulmonary tuberculosis. The earlier medical men recognized only the final stages. All recognized that at this time nothing could be done for the unfortunate patient. With the improvement of methods, the disease was diagnosed at an earlier period, but it is only in comparatively recent years that a knowledge of the methods of the diagnosis in its incipency has become at all widely known to the profession and the public. It is regrettable that to-day we stand in the same relation to mental disorders that the earlier practitioner stood in regard to pulmonary tuberculosis. We only recognize the final stage. The public to-day has no conception of mental diseases, beyond that of a person who is violently destructive or one who has reached an extreme degree of deterioration. Owing to lack of instruction in most medical schools, the practitioner has very little more knowledge, unless he has become, for some reason, unusually interested in this branch of medicine. Expressions, such as "we fear he will lose his mind if something is not done," show how little is realized that this is the end of the patient's disorder and not the beginning, and the general attitude of the public.

There is a wide gap between the commencement of a mental disorder and the period which is usually recognized as such. It will readily be understood that in the insane hospitals to-day we are dealing with a class of patients who have reached the end of their disorder. They are in the position of a patient with tuberculosis with extensive cavities. All will readily understand why the outlook for such patients is so poor. The earlier stages of the disease have passed unrecognized; the symptoms which should put the

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relatives and physicians on their guard are passed over lightly, often with the expression, "He is just nervous," or with a diagnosis of neurasthenia. Too often some trivial physical disorder is looked upon as a cause, and when the condition of the patient finally forces itself upon those most interested the period when successful treatment was possible has been passed.

Mental disorders are different from physical disorders, in that a large proportion of them are of a functional character. Three groups are easily recognized—first, those dependent upon organic disease of the brain; second, those depending upon organic body diseases; and, finally, the largest group, those depending upon the failure of the brain to adapt itself to an environment. In this class we would place those patients who, through the ups and downs of daily life, are constantly in conflict with their surroundings, and unable to adapt themselves to them. In this latter group we would place disorders, classified hysteria, psychasthenia and neurasthenia, with possibly the disturbances of mood. Certain of these disorders are trivial in character and easily dealt with, and from this it is reasoned that they can be of no significance, but there are always a certain number of patients in whom these comparatively minor conditions are the commencement of some serious mental disorder. Unfortunately we are not able in many instances to differentiate the trivial from the serious, but it can at least be said that any nervous disorder which does not yield to ordinary methods of treatment should be looked upon with suspicion. There is also a possibility of error in that some serious disorders may temporarily improve, thus throwing the physician off his guard and leading to errors of diagnosis. As in every other branch of medicine, experience is the best teacher. We learn from careful observation what symptoms predominate in the more serious troubles and those which are present in the benign types. The presence of the first group should always arouse suspicion.

There is a great tendency on the part of the physician as well as the public to make a distinction between mental and nervous disorders. This can only lead to confusion. There is no such distinction possible. All are disorders of the central organ, the brain, whether described as simple nervousness or insanity. A recognition of this fact cannot fail to be of help. It would be the same to speak of the early stages of pulmonary tuberculosis as one disease and the late stages as another. When the physician recognizes this, and that he

is dealing in every instance with a brain disorder, the possibilities of further development are realized and the patient is protected by this knowledge. Not every condition advances uninterrupted to the final stages. We are all familiar with cases of disease showing long remissions. The mental disorder may rarely spontaneously adjust itself or recover under appropriate treatment. Would not that be true of a still larger number if we honestly recognized we are dealing with a brain disorder from the outset and not try to deceive ourselves, until the true nature is apparent to every one?

The term insanity conveys to the lay mind the idea of hopeless illness, a condition in which the sufferer is unable to care for himself or his property or live outside institution walls. The physician's conception should be quite different. He should realize insanity is a legal, not a medical, conception; that each State and county has its own laws governing what shall be included in their class. The intervention of the law will always be necessary in a certain number of instances in order to protect individuals and their property and the community. But is it necessary for medicine to allow the law to define what shall constitute a disease? Is it not better to recognize that only a few of those who suffer come under the jurisdiction of the law? Can we wonder at the reluctance of patients and their relatives to go to institutions where legal commitment is necessary? Would this be true if patients could voluntarily go for treatment to special hospitals, where only the earlier conditions were treated under modern hospital conditions. The recognition of the need of such hospitals must come first, and the demand can only come from a profession fully alive to the importance of the problem. Sanatoria for special purposes only appear when the demand arises. Every institution physician is only too well aware that he receives many of his patients too late. A close study of the histories of asylum cases often shows a long period of mental ill-health, during which he might have been assisted had the facilities been provided for proper treatment. He constantly sees cases of advanced brain syphilis who have been ill for long periods of time with what seem trivial symptoms. During this period a spinal fluid examination would at once show the nature of the trouble. A patient becomes depressed, and we hear of his committing suicide. Here is a death preventable by taking precautions only possible when the condition is recognized. Changes in character, changes in conduct without adequate cause, excitement or depression not in keeping with the facts, suspicious-

ness, ideas of persecution, a tendency to seclusion, difficulties in handling unusual situations, should make one suspect some mental trouble. Questions concerning dissatisfaction with their situation in life, difficulties with relatives, sex problems, will often do more than tonic in that large group of patients every practitioner is seeing who complain of ever-changing symptoms. Many misfits are feeble-minded.

Every community contains individuals who are failures, often through mental twists which can be completely relieved if recognized.

The field opened by a close study of mental abnormalities is not confined to the early diagnosis of conditions which will lead to an asylum. Many mental states which interfere with the individual's enjoyment of life may be corrected.

In closing, we cannot fail to call attention to how often a mental disorder is supposed to depend on some disease of the internal organs and how rarely this is the case. Two men suffer from chronic nephritis, one adapts himself well to the changed condition of life and work necessitated by the disorder; the other fails completely to do this, constantly complains, believing himself dying, and consults numerous physicians. Every one will recognize that the mental state is due, not to the kidneys, but to a brain disorder.

The facilities for the proper treatment of these conditions will only come when the profession recognize the need, and demand them.

DISCUSSION ON THE PAPER OF DR. VAN WART.

Dr. A. A. Herold, Shreveport: We should not allow this excellent paper to go by undiscussed, as there are many points of great interest to us all in it. I know of no two papers of more value to the general practitioner or the internal-medicine man, who is doing more or less general work, than the paper of Dr. Logan last night and the paper of Dr. Van Wart to-day. They both lay stress on the subject of syphilis and not to discharge a patient until cured. There are too many syphilitics running around, as Dr. Van Wart has said, because they have negative Wassermanns after certain treatment. It seems to me the Wassermann should be repeated every six months, and if this is not done a great many patients show up later with central nervous lesions. As one who has seen 200 cases of insanity as Coroner, I can speak from experience, and these cases should be handled early, as Dr. Van Wart has urged. In one case I recall the family besieged the Coroner's office and the District Attorney's office, claiming that the particular member of that family was not insane; that he had been poisoned. In the cases

of negroes it is frequently said they have been hoodooed. If there is sufficient cause, we try to hold him until we can get him to an institution and keep him there under observation to determine whether he is really insane or not; otherwise the majority of cases, when they come back to us, are worse, especially those without institutional treatment, than they were before. I would lay stress upon the complete cure of syphilis, thereby saving many cases from developing into insanity.

Dr. John N. Thomas, Pineville: I have listened with a great deal of interest to Dr. Van Wart's paper, and fully concur with him in the necessity of the early diagnosis of these cases. However, that depends upon the nature of the cases. I am a firm believer in the law of heredity. I do not think there is a more immutable law than that. If these cases come from hereditary taint, I believe it is exceedingly difficult to vary their course. If there is anything to be done at all, for instance in cases of paresis, it will depend upon a very early diagnosis.

I attended a clinic last June in Chicago under the auspices of the Chicago Medical Society; there they are making a specialty in the early diagnosis of mental disease. Many of their cases of paresis were among business men; there were lapses of memory, and I found in these cases they were draining the brain through the spine, taking as much as 60 centimeters of fluid. These cases, in many instances, were completely relieved from one to two years. I have been trying this treatment in cases of dementia precox, with no result whatever. At our staff meetings here we made selections of cases and tried it, without any apparent result.

As to other kinds of cases of mental diseases, I do not think there is any class that is receiving the attention of the psychiatrists of the world to-day as dementia precox. Up to this time there has nothing whatever been done, so far as I know, to prevent these cases making steady and unfavorable progress. There are cases of dementia precox among the rich in this country, where relatives are spending thousands of dollars in sending these patients from one hospital to another, without any apparent relief whatever. Of course, the cases we get here are generally in the worst condition. The cases you saw to-day are the worst type of cases. I expected to have had a number of cases of high-grade imbeciles to show you, but they were not shown. We have not less than 200 cases of that sort working out on the farm to-day. This is the class of people who commit murders and burn houses when they take in excess alcohol or commit excesses of any sort. These people are imbeciles from birth. The only cases I know that can be especially benefited by the early diagnosis are those with paresis. There may be others, and if, as I say, there are any hereditary tendencies, and there are in 60 to 70 per cent of the cases, I do not believe anything whatever can be done.

I was much interested in Dr. Van Wart's paper, and I would like him to tell me how we can stop the progress in the general run of mental diseases.

Dr. Joseph O'Hara, New Orleans: The only disagreeable feature I see in Dr. Van Wart's paper is that it is too short. As he spoke along the line of early diagnosis of insanity, it should be the keynote for medical men to accept the widespread nature of the disease, for if there is any disease in the world from which we can get partial results we get them from the early diagnosis and timely treatment of this disease. Just as soon as you find a change in disposition or relationship of an

individual, whether it be of the nervous or psychic type, you have a change absolutely from nature. As soon as you find an individual with a change in his disposition, with a change in his nervous condition, a change in his attitude towards others, a change in his speech, lack of memory, etc., remember that the upper end of his spine is where the trouble is. When I was studying insanity an old physician told me to remember the spine; that it was not made simply to hold you erect, it was not made to sit on one end and grow hair on the other. Just as soon as you notice a change in the disposition of an individual, if you want to get any relief, you must get it by early diagnosis. Remember, also, that there is more the matter with people than syphilis, malaria and tuberculosis. Many of the individuals you have seen to-day, if taken at the right time, could be made useful citizens and valuable assets to Louisiana, instead of being an encumbrance to this institution to-day.

Dr. R. P. Evans, Shreveport: I have listened to Dr. Van Wart's paper with a great deal of interest, and I know of nothing more beneficial to the public and to the State than the early recognition of beginning central nervous system involvement as a result of syphilis. If we do not get after it, the end results we cannot cope with at all after they reach a State institution. All I can suggest to the doctors is that we watch these cases diligently and closely and make a diagnosis early.

Dr. C. V. Unsworth, New Orleans: If we do nothing else but impress upon the general practitioner the fact that he should go closely and carefully over the family history of these cases and find out what is back of the trouble we will have accomplished a great deal. If we cannot classify these cases, we can do much towards regulating these people and teaching them how to live better lives and how to regulate their habits. There are a lot of them who ought not be permitted to get married. I will cite a case that came to the Retreat, a girl whose mother was insane. She had a brother insane, both of them in Jackson. She went along very well until she got married. Five days after her marriage she became insane. I do not think sexual intercourse made her insane; I think she was born insane, and marriage facilitated the development of the condition. If her life had been regulated properly she never would have been permitted to marry.

The doctor's paper should stimulate interest on the part of practitioners to classify these cases so that we may be able to treat them more thoroughly.

So far as paresis is concerned, I never saw any of them develop neuritis until after they had paresis, and if a man has had the symptoms of paresis when he first developed his chancre, that was the time he should be treated for paresis. Don't wait until he gets his grandiose ideas. The moment he has chancre he is a paretic if you do not treat him properly.

Dr. Van Wart (closing): I believe the only solution of these difficult cases is in recognizing the fact that the psychoses are due to bad mental habits; that a large proportion of these cases are not the result of a simple, bad, inherited brain that belongs to the imbecile and idiot class. But we should be given a chance, and have the opportunity to study out what is the matter. If we find some of these symptoms developing in a child we should correct them. We should give them the chance that they really deserve.

I believe that dementia precox in most instances is a preventable disease. We see thousands of cases who reach a certain point and show symptoms up to a certain degree and stop; they are unable to go on

afterwards as efficient individuals. Let us take the chronic depressive group; we get disturbances of mind. We find that in many individuals who are walking the streets and passing as normal; they are the subjects of depression and feel blue. There is no essential difference, so far as the mental condition is concerned, between these people and the cases you saw this afternoon. It is a question of degree. If we can find out what it is that causes this depression, this condition of feeling blue, we could undoubtedly do a good deal towards preventing it. In the organic cases we cannot hope to do much, particularly in the profound organic cases, because in this class there is a large group of disturbances to which Krepelin has called attention, and there is a group of dementia precox disturbances. Many of the psychoses are undoubtedly the result of intoxication, and then there is a group of cases which he called as belonging to hysteria, neurasthenia and psychasthenia. This group offers a great chance and opportunity, by proper educational methods and environmental surroundings, of correcting the condition.

I might call your attention to the great movement taking place in what is spoken of as mental hygiene. The Rockefeller Foundation has financed this movement; they have a salaried director, and have established branches in every State. The purpose is to bring to the public knowledge that insanity is a preventable disease in a large number of instances, just as hygiene may help in tuberculosis and certain other conditions, so that the proper education of the child, the prevention and correction of bad mental habits, will bring about the prevention of a large number of these cases coming to a hospital of this kind. We have got to commence early and prevent those things that lead to bad conditions. Let us take the habit of seclusiveness. Let us take many other mental processes, such as the habit of compulsive thinking, the habit of becoming depressed without undue cause. All these, when exaggerated, lead to other causes. In these dementia precox cases, in addition to exclusiveness, these patients revolve in a world of their own. A world of actual beings means nothing to them. It is difficult, long before the hospital stage, to get these patients to do anything with their hands. They get satisfied about unreal things, and the habit of living in a world of unreality is one of the most potent causes underlying the psychoses, as we see them demonstrated this afternoon.

EXTREME PROGNATHISM RELIEVED BY BILATERAL RESECTION OF THE MANDIBLE.*

B. HERMANN B. GESSNER, M. D., F. A. C. S., AND PAUL DeVERGES, D. D. S.,
New Orleans, La.

F. K., white male, 24 years old, baker, was seen June 17, 1916. *Complaint:* About ten years ago lower jaw began to increase in size; it has been getting larger since, until a well-marked prognathism has developed.

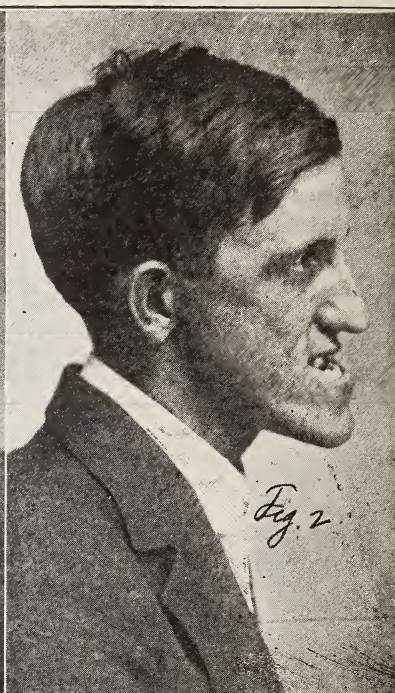
Family history and previous history negative. *Physical examination:* Organs normal.

* Case presented before the Touro Infirmary Medical Staff, at its Clinical Meeting, January 3, 1917.

This case was studied from the orthodontic viewpoint by Dr. Paul DeVerges, who determined that the case could not be treated successfully by the usual orthodontic methods, and recommended bilateral resection of the mandible according to the method of Blair, of St. Louis.

Dr. DeVerges had the patient photographed; also took impressions from his jaws and face, from which casts were made. Study of the casts showed that division of the bone on each side, through the two bicuspid sockets, with removal of the outlined segment of bone, would give the desired reduction in the body of the mandible. Operation was set for the 26th of June. Before this time patient's mouth was thoroughly prepared, teeth and gums being put in excellent condition of asepsis, cavities cleaned and filled, scaling carried out; the bicuspids were removed at this time.

The operation was done at Touro Infirmary by Dr. Gessner, with the assistance of Dr. DeVerges and Dr. Townsend, under local anesthesia, with one-fifth per cent eucain B. hydrochlorate plus 1/100,000 adrenalin hydrochloride for infiltration of skin and mucous membrane, one per cent eucain B. hydrochlorate for paraneural anesthesia of the inferior dental at the lingula; three ounces of the infiltration fluid were used, about three drachms of the one per cent solution for paraneural injection. An incision was made under the lower border of the mandible on each side, the center corresponding to the bicuspid region. After elevation of the skin and muscles, the periosteum was divided transversely; on the lingual side, the mucous membrane and periosteum were divided transversely without separation. The teeth had been extracted several days previously to allow the gums to heal before the operation. Two lines of section were now made on each side, with a metacarpal saw, each going through a bicuspid socket. The anesthesia was satisfactory, except when the inferior dental nerves were divided in their canals with the saw; when this was done the patient complained a good deal, until the nerve trunk was infiltrated through the saw track. Immobilization was accomplished, first by a heavy silver wire uniting the lower borders of the fragments on each side; the skin was now sutured with silkworm gut drains in place. Above, three interdental splints were cemented unto (a) the teeth of the anterior fragment; (b) and (c), the teeth of the lateral halves posteriorly. These splints, prepared by Dr. DeVerges in accordance with dental technics, were fixed to-



gether with minute bolts and nuts so as to immobilize the three fragments into which the mandible had been divided.

In the after-treatment special stress was laid on the frequent flushing out of the mouth with dilute (1/4000) permanganate solutions, not less than a pint at a time. Infection was avoided, and union progressed very satisfactorily. On the left side there was a little delay, but when the intraoral splints were removed, after a little more than two months, the stimulation caused by use of the jaw resulted in speedy completion of the process of union.

At the present time the patient has, as you may determine by examination, complete and firm union, with a satisfactory reduction of the extreme deformity previously existing. There still remains some orthodontic work to be done by Dr. DeVerges, in the shape of advancement of the upper teeth, which are behind the proper alignment, for his face.

Examination of the fragments removed shows that on one side the mental foramen was removed, thus sacrificing the mental branch, a considerable avenue for collateral circulation. Dr. DeVerges, who has seen Dr. Blair operate, tells us that he appears to pay no attention to the foramina; certainly he makes no reference to them in his descriptions. Recently I have received a personal communication from Dr. Blair confirming this impression.

A possible danger in this operation is that of non-union, which would leave the patient in a very uncomfortable condition. However, in this day of transplants, the transfer of a segment of rib would in all probability produce the required consolidation of the fragments.

We are indebted to Dr. R. Matas and staff for valuable aid in carrying out the after-treatment during the prolonged absence of the operator.

Figures I and II show the appearance of the patient before operation; Fig. III, that after intervention; Fig IV, the orthodontic apparatus in place on the crowns of the teeth.

PROCEEDINGS OF THE AMERICAN SOCIETY OF TROPICAL MEDICINE

PRESIDENT'S ADDRESS.

The Relation of Laboratory Men to the Practice of Medicine in the Tropics.

By COL. BAILEY K. ASHFORD, Medical Corps, U. S. Army.

The decidedly new relation between scientific medicine and the more or less stereotyped practice of respectable but aging "schools" of medicine compels a revival of the well-worn theme. For, unless the ever-more vigorous young ideas build into these monuments of clinical glory, we may lose their invaluable inspiration and forget the lessons they teach us. If this is so of what we are pleased to call "scientific medicine," it is preëminently so of creative medicine, of scientific medical investigation.

What the laboratory man finds in civilized tropical countries is a highly cultured group of men, educated in accredited medical centers, chiefly those of Paris, Barcelona and Madrid. Some hail from Vienna, London and Berlin. Many, in countries large enough to support them, from local schools of more or less value, but almost without exception redolent of the temperate climes of the Old World. Not that such centers are not still the controlling element, with our own, in medical thought, but that they do not usually teach enough tropical medicine. Even to-day, in this country, almost all we know of tropical diseases proceeds from laboratory sections of our societies. Therefore, the practicing physician we find on the ground, when we reach the tropics, originally came with ideas also foreign to the soil, and many practice these ideas valiantly until their souls are parted from their bodies, with a zeal worthy of the Crusaders.

The difficulty of reconciling the daily growing appetite for unbiased scientific analysis all over the world with which our young men of modern schools are imbued, to the army of clinicians and therapists who were taught to rely upon their clinical acumen alone, is due to the conception the profession at large in the tropics has of the laboratory and the laboratory man. Fortunate is the man who can begin a useful laboratory career in the tropics in a

field of clinical medicine. Ordinarily a clinician is averse to taking a mere laboratory technician too seriously—rightly so, in too many instances. A man who aspires to be a factor in the medical progress of the tropics must be a specialist in tropical diseases, and the laboratory only furnishes part of the *vis a tergo*. Practical application of this new order of things is that, instead of limiting the laboratory specialist to a disjointed report on a specimen of blood, feces, urine, or other drop or fragment of the patient, by means of which he is bidden to cover all fields which the microscope or its close allies are supposed to illumine, he is being called more and more to exercise his higher mission as a physician in consultation. A physician in the tropics, not able himself to investigate his patient's case by laboratory methods, and failing to clear up a doubt in the usual way by delivering to laboratories such specimens as admit of a simple, immediate, and positive report, should call in consultation, not now the laboratory technician—no, but the malariologist, the mycologist, the medical zoölogist—in a word, the expert on tropical diseases, capable of carrying the case to its ultimate analysis by modern methods in his own laboratory, to the end that the negative may be developed and the real diagnosis shine forth. And that diagnosis is by no means the fruit of the laboratory alone. Often the laboratory work yields negative, or doubtful, or, worst of all, misleading information—more often than not.

All this means, *not* that the clinician is helpless without a laboratory guide. We all have our ideas about that, the degree of superlative depending largely on the sum total of confinement at the desk or in the laboratory itself, and such genial epigrams are liable to "start something." But it does mean that a man with a title of doctor of medicine in the tropics, at present at least, is not advancing the cause of progressive medicine by shutting himself up in a laboratory and neglecting the *practice* of his art. Every man who desires to make his laboratory knowledge a light to dissipate the shadows of bedside analysis and who hopes to win the hearty respect and coöperation of the men who have the responsibility for the life or health of the sick man, should become a specialist in those diseases before he can hope to have the power to ferret out causes in the workshops of our great profession. Otherwise he will forever remain an appendix, poorly paid, underestimated, and relegated to a minor rôle in the dramas in which he should by right take a prominent part.

And *this* means not only that such a man should be versed in diagnosis, but in treatment. There are times when he is called to verily act as a pilot, even with a captain of superior knowledge of the art as a navigator. Rather frequently such cases are turned over bodily to the laboratory specialist in tropical lands for treatment, if not in appearance, at least in fact.

Thus we may preserve our heritage as physicians, profiting immensely by the more equal and intimate relation established between ourselves and so-called clinicians.

Laboratory men are to be pardoned for wishing to step out of their microscopic life in tropical countries. It is perfectly apparent that tropical countries have received a special and very vitalizing influence from these men.

Let us be specific and visualize a few of the scenes that are daily occurring in the practice of tropical medicine:

MALARIA.—The manner of administering quinin by those whose laboratory sense is undeveloped is one of the most serious problems of hot countries. The sinners that give quinin for all fevers are legion. If they eventually call in a malariologist, by that time the organisms are apt to be reduced in the peripheral circulation of the blood to an extent incompatible with an otherwise perfectly simple diagnosis, and the patient is condemned to a chronic form of the disease or to a needless, even harmful, course of a drug on a mere guess, too often clinically unfounded, leaving the real cause to work its will.

FILARIASIS.—The absence of circulating embryos in the blood in the presence of acute attacks is notoriously frequent. A mere tyro can make a positive finding when they are present, but it requires an expert clinician to change diagnosis like "Climatic bubo," "Renal colic," "Appendicitis," "Ovaritis," "Orchitis," etc., into deep filarial lymphangitis in the absence of filaria from the blood. Many of us have seen surgical intervention terminate in sickening revelations in such cases.

DENGUE.—W. W. King's recent work on this disease should bring out the necessity for more careful blood examination for a diagnosis. His skill as a clinician was responsible for his ability to cite so many cases, not only his own, but those to which he was called as a consultant, and his patient laboratory work, involving almost daily blood counts in each case, has opened a way for a more

scientific recognition of a disease which, coming unawares, may confuse the best clinician.

YELLOW FEVER.—No early case so badly needs a clinical expert, but the assistance of a laboratory in differential diagnosis here is self-evident. The helplessness of a mere laboratory technician is no better illustrated.

INTESTINAL PARASITES.—Without commenting at length on the confusion between malaria, pernicious anemia, certain nutritional disturbances, due to an illy-balanced ration, and uncinariasis, we must bear in mind the undeniable fact that for over a century the latter disease was totally unrecognized, and the other diagnoses mentioned were almost universally made all over the world. It seems impossible now, but the utter lack of appreciation of the importance of the microscope in the practice of medicine at that time was responsible for it, and, in fact, it took a five years' war in Porto Rico to establish the right to be heard—though the organism had been known for sixty years, and its relation to the disease for thirty; even then the devil had to be fought with fire—by wholesale clinical methods.

DYSENTERY.—I remember a case in which a laboratory friend of mine was called to see a case of "dysentery." The physician in charge reported that he had had the feces examined by a laboratory technician, who reported *Endameba histolytica*. He had given emetin daily for a couple of months, but the dysentery continued. My friend reexamined the feces and found ova of *Schistosoma mansoni*. The giving of emetin on clinical grounds is getting to be a rival of the quinin fiend's obsession in the tropics. Not only is it given for "dysentery" of all kinds, but it is even administered for most varied, obscure conditions, in the hope that it may hit some undiscovered protozoon.

SPRUE.—What is usually defined as sprue in our text-books is usually the terminal phase of sprue. Sprue, like all progressive chronic infections, has its incipient and incomplete picture, sometimes throughout many years, before the veil is lifted. A tremendous number of mild cases never present a clear picture, and spontaneously fade away. My own views on sprue, its cause, diagnosis and treatment, are radical, and this is no time to air them, but I do not fear contradiction even when I state that in no disease of the tropics is an acute clinical sense more urgently

demanding than in this affection. I prophesy that when the discussion on the etiology of sprue ends the nature of certain chronic intestinal disorders now usually attributed to climatic influences in a mighty army of sufferers in the tropics will be unmasked. One instance will suffice: The patient was suffering from an intense anemia, extremely irregular heart action, and vague but intermittent intestinal disturbances. He also had a history of recent syphilis treated by neo-salvarsan. Consultation revealed a clear past history of sprue, now in a quiescent stage, and totally unsuspected. Cultures from feces and tongue positive for *Monilia psilosis*; complement fixation for sprue positive; for syphilis negative. The diagnosis of the laboratory consultant was not accepted, but later the patient had a typical acute exacerbation; the physician in charge of the case yielded, and killed cultures of *Monilia psilosis* are being inoculated at regular intervals. The disease is apparently disappearing. This case had been considered one of syphilis, with myocarditis.

I would respectfully beg our Northern brothers to take at least a mild interest in this sprue. Beyond the fact that it exists in our Southern States, from recent reports, our general practitioners here are receiving from time to time waif cases that stray North and at times return worse than when they left their tropical home. I know of a patient that landed in Spain with this idea and was operated upon by a distinguished surgeon for ulcer of the stomach.

Many instances of mutual enlightenment of laboratory specialist and clinician might, of course, be cited, but only good to the patient can come from an intelligent coöperation between the two. The ideals expressed in this paper are an accomplished fact in the Institute of Tropical Medicine and Hygiene of Porto Rico. I know of no more enlightened body of medical men in the tropics, in this regard, than we find in general practice in that island. From the days of the American occupation in 1898 to date the medical progress has been steady, and to-day Americans, like ourselves, in spirit as well as in word, they are contributing vigorously to sustain the good name of American medicine in tropical lands. There is still one more step to be taken: When all of the young men from the island who study medicine in our own country (and to-day almost all of our graduates there are from American schools) receive proper clinical and laboratory training in tropical medi-

cine, the wall between the clinical and the laboratory man will be demolished, and upon its ruins will arise greater things for scientific medicine.

Such should be the attitude of the practitioner toward laboratory men in our tropics; such should be the ambition of the latter, to the end that what they acquire from a common source, the patient, may be utilized in a practical manner for his good and for the good repute of the profession they serve. And I ask that this spirit may pervade the American Society of Tropical Medicine, our natural representative in the American Medical Association. These changes in the attitude of the clinician to his colleague of the laboratory are quiet revolutions, and they highly commend the spirit of progress in Porto Rico as well as wherever else they may have occurred.

In a different way, but with much the same result, the Oswaldo Cruz Institute of Brazil is playing a winning hand in the development of medical science in that country—not that it is the only center which contributes, but it is the most important one. Its remarkable and lamented founder, Oswaldo himself, stepped from a laboratory into one of the most exciting and romantic crusades against disease in the history of tropical medicine, for, in his struggle to put into practice the measures we Americans had already adopted in Cuba, he met with such opposition as to verily test the foundation of government—at least in Rio, where he worked. He won, and won for his laboratory the respect and co-operation of his confrères all over that vast country, as well as the grateful affection of his people. Chagas, a worthy successor, the discoverer of *Trypanosoma cruzi* and exponent of its clinical picture, is noted not only for his clear enunciation of the etiology of the terrible “papo,” or epidemic thyroiditis, of the interior, but especially among his colleagues in the clinical life of Rio de Janeiro for his consummate skill as a clinician. Lutz, South America’s great entomologist, was and is still a noted physician—and so on through Neivas, Godoy and the long list of workers in this glorious memorial to Oswaldo Cruz, diamond of the first water in tropical medicine.

I have not mentioned our own great men in this resumé. You know them, perhaps, better than I, and their epoch-making work is known to us all. Nor have I mentioned the corps of brilliant

English and French laborers in the field of tropical medicine. I have only spoken of men and things I have seen, of scenes through which I have lived, and of some of those from whom I have learned the value of clinical medicine in solving laboratory problems. But the flood of life-bathing paths of tropical medicine to-day does not proceed alone from the laboratory. Manson, Laveran, Celli, Oswaldo Cruz, and our own Reed and Gorgas—all—all of these men have been great diagnosticians, great sociologists and great physicians. Let us not fail to apply the lesson and emulate their brilliant example.

TREASURER'S REPORT.

Receipts.

Balance May 2, 1916.....	\$ 94.96
Membership fees.	448.10

\$543.06

Disbursements.

Secretary's office expenses	30.31
Expense Fourteenth Annual Meeting	19.31
Transactions.	468.00

\$517.62

Balance June 2, 1917.....	25.44
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\$543.06

Library Fund.	\$27.97
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Checks not presented for payment:

No. 19.	\$18.00
No. 20.	2.52

\$20.52

Balance.....	25.44
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\$45.96 Balance in Bank Book.

Unpaid bills:

J. C. Winston Company,	
Expense of Fourteenth Annual Meeting.....	\$17.28

JOHN M. SWAN, Treasurer.

MEMBERSHIP.

May 1, 1916—Active.	117
Corresponding.	17
Honorary.	33
Gains—Active, elected May 10, 1916.	10
Losses—Active.	5
Resigned: W. M. Kerr.	
Henry Du R. Phelan.	
Alexander Lambert.	
C. H. Lavinder.	
B. Franklin Royer.	
Died.	3
R. H. von Ezdorf.	
D. Braden Kyle.	
John K. Mitchell	8
Net gain.	2
Honorary.	3
Died: Eli Metchnikoff.	
William Murrell.	
Mail returned, not delivered—Prof. Sanarelli.	1
Corresponding—Mail returned, not delivered: Jesus Mon- jares.	1
Membership June 1, 1917:	
Active.	119
Corresponding.	16
Honorary.	30

CURRENT LITERATURE

OPERATIVE IMMOBILIZATION OF THE SPINE.—Professor Dr. F. De Quervain and Dr. H. Hoessly, Basel Switzerland (*Surgery, Gynecology and Obstetrics*, Vol. XXIV, No. 4, April, 1917).—Operative immobilization of the spine has, as we know, been practiced at least twenty years. However, the first attempts at immobilization were, for obvious reasons, unsuccessful; they were unable to meet the twofold requirements of rapid and permanent support. Chipault and Hadra, who proposed and applied wire sutures to the spinous processes or to the vertebral arches, certainly achieved rapid but not permanent support, as the wire they employed gradually cut through the bone, and the latter was exposed to a certain amount of traction. The suggestion of Calot and Vulpis to employ flaps of periosteum obtained from the spinous processes might, if successful, have achieved permanent but by no

means rapid support. The same remark applies to Hibb's and Henle's methods of breaking and forming flaps with the spinous processes. The two above-mentioned conditions could only be fulfilled by introducing a strong, sufficiently long bone-graft. It is by no means essential that the transplanted bone should primarily heal into its surrounding tissue. Its foremost task is rather to provide by means of its inflexibility an immediate and firm support. In the same degree that this support fulfills the function demanded of it will it undergo gradual organization—*i. e.*, it will be *replaced by new bone*, which adapts itself, both in regard to form and firmness, to the demands made upon it. The surgeon must, by means of an operation, pave the way for a more rapid and certain attainment of that which nature achieves gradually in many cases of Pott's disease and traumatic injuries of the spine.

The Results of Histologic Examinations of Transplants.—The investigation of bone sections from fortnight-old transplantations presents the following: Lower magnification reveals nothing special in the bone. The color of the latter is certainly somewhat pale, but normal, and both the bone-cells and tissue in the marrow spaces and canals seem to have undergone no change. It appears, in fact, as if the transplanted bone would, as such, continue to live. Higher magnification (homogens immersion) prove, however, that such is not the case. We find the bone-cells in the median-area of the transplants greatly changed. Some of them are shrunken, and in general they are quite pale, or show no color whatever. These conditions prevail in all parts of the transplant, whereas the bone-cells of its bed—*i. e.*, of the spinous processes—are everywhere well preserved and present normal form and coloring. Only here and there, in the border zone of the bone-lamellæ, just where the latter adjoin the marrow cavities and Haversian tubes, are to be seen, in contrast to the light-red original bone, some new bone-lamellas of a darker reddish-blue tint, which present, as their most prominent characteristic, well-formed, normal, darkly tinged bone-cells reposing in the cellulæ.

In the marrow cavities and tubes there is no longer any dead tissue, but everywhere numerous young blood vessels, young connecting tissue richly supplied with cells, and, what is more important, the marrow cavities are lined with a high layer of cubic osteoblasts. The presence of these osteoblasts points to a rich endosteal proliferation, while, as before mentioned, here and there in the

periphery of the bone-beams, new bone lamellæ originate. They proliferate toward the old bone and are at length separated from the latter only by an extremely fine, bluish boundary line, festoon formation of the bone lamellæ (Marchand). Nowhere in the neighborhood are small-celled inflammatory infiltrations or more decided necrotic foci to be found. In the different spots we observe that high osteoblasts leave their cell community and wander into the newly-formed bone lamellæ, where they become characteristic bone-cellules. *The eradication of the old bone by the new bone-lamellæ is apparent in every section, and presents only quantitative differences.* These histological discoveries, which coincide with those of Radzimowsky, A. Barth, Fiscoeder, Valan, Marchand and Axhausen, some authors we mention as having devoted their attention to the question of bone transplantation, permit of no other conclusion than that bone transplants in the vicinity of the spinous processes which have autoplastically healed in, are infallibly *doomed, and that, in the place of the old bone, a new bone is generated by means of lamellary apposition.* The originally transplanted bone is, therefore, from a histological point of view, doomed to death, and is replaced by a new bone.

We must, however, mention that, in between the new bone, cartilaginous islands are to be found. Their presence proves what is easily to be understood, viz: that the union between the bone-graft and the spinous processes is not yet absolutely firm. In sections of older transplants this cartilage has disappeared.

The examination of sections of bone-grafts four to eight weeks after transplantation reveals no sign whatever of the original bone. The advantage of applying fresh autoplasmic material is, however, that the transformation of the original to the new bone is thereby facilitated, because the young blood vessels and bone-forming cells can proliferate more easily into the old blood-vessel tubes, and the process of destruction-rebuilding up of bone substitute is made easier (Marchand).

The paramount condition for a successful issue is a strictly aseptic and rapid operation.

Albee's opinion, that the bone-graft possesses anti-bacterial force, is entirely without foundation—the fundamental principles involved in the use of bone-graft in surgery—and I must say that I myself cannot find a reason for this "bacteria-resisting" quality.

ISIDORE COHN.

ON SOME LITTLE-KNOWN COMPLICATIONS OF MUMPS.—Drs. Felix Ramond and Gabriel Goubert (*Presse Médicale*, March 25, 1915), physicians of the military hospitals of Châlons-Sur-Marne, have studied 150 cases of mumps. They call attention to certain unusual complications observed by them, and particularly those affecting the genito-urinary, lymphatic, and digestive systems.

1. *Orchitis* was observed only five times.

2. *Epididymitis* was found more frequently than classical authors state. The authors state that epididymitis was encountered in fifteen cases without orchitis, which runs counter to the opinion generally held that epididymitis follows orchitis. It is most commonly unilateral.

3. *Funiculitis*. It may accompany the two preceding manifestations, but is generally independent of them. It is the most frequent complication (forty cases out of the 150). It usually appears on the second or third day of the disease, and sometimes even precedes the parotid manifestations. The cord is hypertrophied, painful, and rolls under the finger. The funiculitis lasts from fifteen to twenty days.

4. *Prostatitis* and *vesiculitis*. In twenty-three cases there was a feeling of heaviness at the base of the bladder, dysuria, and pollakiuria; sometimes difficulty in defecation; rectal palpation showed hypertrophy of the prostate in four cases, or tenderness (fourteen cases), and one case of hypertrophy of the seminal vesicles.

5. *Adenopathy*. In Scarpa's triangle, the iliac ganglia were enlarged. They also observed generalized micropoly, adenitis, tracheo-bronchial adenopathy, and hypertrophy of the tonsils (forty cases).

6. *Disorders of Digestion*. (a) Diarrhea (sixty cases); (b) appendicitis (two cases), which recovered under medicinal treatment in fifteen days.—*Revue de Laryngologie, d'Otologie, et de Rhinologie*.

McSHANE.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

Edited by DR. L. R. DE BUYS, Secretary-Treasurer.

MEDICAL EFFICIENCY.

There can be no doubt that our National Government does not wish to impair the efficiency of the medical profession as a whole nor the medical man individually, as the health, care and future of our nation are dependent upon our medical efficiency. While it is true that the necessary laws have not yet been passed, they will of necessity be made just as soon as it is appreciated that this country should benefit by the experiences of some of the countries now at war.

At meeting held in Washington, under the auspices of the Council of National Defense, Medical Section, to which the deans of all our medical schools were called, the need of continuing the education of medical students was appreciated. This view was concurred in by the Surgeon-General's office; so much so that the medical schools were instructed to discourage the enlisting of their medical students, as it is to them the National Government must look for its future medical officers. On the other hand, it was also recognized that, in order to properly equip these future medical officers, the efficiency of the medical schools must be maintained. These schools were, therefore, requested to submit the lists of the names of their teachers indispensable to the carrying on of their medical curricula without interference of their standards.

While the necessary precautionary measures are to be taken to provide for more physicians properly educated, the continued advancement in medical knowledge of our doctors is not to be overlooked. The American medical profession has attained its present standing through the dissemination of medical knowledge by those of its members whose investigations and observations are presented at our medical meetings. These medical meetings are indispensable to the continued advancement of the science of medicine.

The writer knows of no provision being made in any of the many medical organizations in this country for the suspension of their regular meetings. Our State, which has been so exemplary in every other way during the national crisis, must not now change

its course, particularly in medical matters. On the contrary, every member of the Louisiana State Medical Society (yes, and every man who is not a member, but is eligible, and who should become a member) should feel it incumbent upon him to do his share at our regular annual meeting to be held in New Orleans on April 16, 17 and 18, 1918. The chairmen of the various sections should feel a special responsibility this year, as it is upon them that rests the success of our next meeting by providing a superior program. While this responsibility is vested in the chairman, his burden may be considerably lessened if each member of the Society who has anything to present, either in original investigation or clinical experience, will notify the chairman in whose section he wishes to present his results. The meeting will be of great benefit if the members to appear on the program will begin the preparation of their investigation as early as possible, as these results are always of more value than those left to the eleventh-hour.

For the information of our members, the following are the chairmen of the sections:

Medicine and Therapeutics—Dr. J. L. Adams, Monroe.

Surgery and Anatomy—Dr. J. M. Batchelor, New Orleans.

Gynecology and Obstetrics—Dr. W. D. Phillips, New Orleans.

Bacteriology and Pathology—Dr. J. J. Wymer, New Orleans.

Mental and Nervous Diseases—Dr. C. S. Holbrook, Jackson.

Eye, Ear, Nose and Throat—Dr. T. J. Dimitry, New Orleans.

Diseases of Children—Dr. Geo. Kreeger, Lake Charles.

Diseases of Skin—Dr. J. N. Roussel, New Orleans.

Radiology and Radiotherapy—Dr. Adolph Henriques, New Orleans.

Genito-Urinary and Rectal Diseases—Dr. H. W. E. Walther, New Orleans.

Tropical and Preventive Medicine—Dr. J. J. Ayo, Donaldsonville.

Let Louisiana do her share in maintaining medical efficiency and thereby assist the government.

NEWS AND COMMENT

THE LOUISIANA STATE BOARD OF MEDICAL EXAMINERS held a session in this city, June 7, 8 and 9, 1917, the following members present: Dr. J. G. Martin, president, Dr. Leon J. Menville and Dr. E. W. Mahler, secretary-treasurer *protem*. Forty-one physicians were present for examination, of which number thirty-four passed and were granted certificates. Seven applicants failed. The names of the successful applicants who received certificates are as follows:

Allgeyer, Ernest Emile; Barker, Jr., William Edward; Chapman, Oliver Marion; Combre, Theophile Albert; deReyna, George Joseph; Eidson, William Russell; Floyd, Winfield Newton; Fuchs, Valentine Henry; Gage, Idys Mims; Gardiner, Henry Lawrence; Howell, Franklin Albert; Irwin, John Joseph; Jones, John Paul; Levy, Walter Edmond; Lyons, Samuel Benson; McKenzie, Ernest Monroe; Martin, Dawson Telesphore; Mayer, George Alfred; Menendez, Anthony Manuel; Menendez, Joseph Charles; Meyer, Francis Albert; Morgan, John Ralph; Paul, Banks I.; Ramsey, George A.; Rankin, Richard Brandon; Rosenthal, Jonas William; Royals, Walter Clifton; Singleton, John Milton; Stell, Jack Sidney; Tarleton, Francis Samuel; Thompson, Henry Franklin; Underwood, Samuel Sellers; Ward, Rawlin Robert; Willey, Felix Jefferson.

The two applicants granted reciprocity certificates are: Frank Emil Lindahl and Victor Wiley Maxwell.

The next meeting will take place in this city, December 6, 7 and 8, 1917.

TRI-STATE HOSPITAL FOR CRIPPLED CHILDREN.—Arkansas and Mississippi have been asked to join Tennessee to share in the first cost of the Tri-State Hospital for Crippled Children, which is to be located in or near Memphis. Memphis' share for the institution is to be \$25,000. There are said to be nearly 10,000 crippled children in the three States, most of whom are dependent.

THE ANNUAL MEETING OF THE AMERICAN SURGICAL ASSOCIATION was held in Boston, June 2, and the following officers were elected: President, Dr. Thomas W. Huntington, San Francisco; vice-presidents, Dr. Albert J. Ochsner, Chicago, and John B. Deaver, Philadelphia; secretary, Dr. John H. Gibbon, Philadelphia. The Association will meet next year in Cincinnati.

SPECIAL CAMPAIGN AGAINST YELLOW FEVER.—Dr. Juan Guiteras, director of sanitation in Cuba, has been authorized by the Cuban Government and the International Health Commission to inaugurate a vigorous campaign against yellow fever conditions wherever they may be found in other countries. It is proposed to

begin the scientific researches on the Island of Martinique and in Maracaibo.

HOSPITAL UNITS FOR NERVOUS AND MENTAL DISORDERS.—A sub-committee on furnishing hospital units for nervous and mental disorders to the United States Government has been created by the National Committee for Mental Hygiene. Dr. Pearce Bailey, of New York, chairman of the sub-committee, is authorized to secure the services of alienists and neurologists, to be commissioned in the Officers' Reserve Corps, and to serve in the neuro-psychiatric units which are to be attached to the military hospitals of the United States. For further information and application blanks, address the National Committee for Mental Hygiene, 50 Union Square, New York City.

DISTRICT NURSING A SUCCESS.—Through the services of the Instructive District Nursing Association of Boston, the death rate among babies during the year was reduced by as much as 50 per cent in some parts of the city. Fifteen thousand homes were visited by the organization, nearly a fourth of the patients being children and an equal number maternity cases.

THE SEAMAN GOLD MEDAL, given by Dr. Louis Livingston Seaman and annually awarded by the American Museum of Safety, has been conferred on the Julius King Optical Company for progress achieved in overcoming the harmful effects of ultra-violet and infra-red rays of light in connection with arc-welding and other processes at very high temperatures.

ANTHRAX IN CHINESE HAIR.—A local government board has recently traced the source of anthrax cases in London to shaving brushes made up mostly of Chinese horsehair which was heavily infected with the anthrax germ. The same germ was found to have heavily infected a consignment of shaving brushes from Japan.

TO INVESTIGATE FOOD POISONING.—The National Cannery Association's offer of \$20,000 annually for three years, to be used in the investigation of food poisoning, has been accepted by the Harvard University. Researches into the subject of ptomain poisoning, with a special reference to canned goods, will be made by the Harvard Medical School under the direction of Dr. Milton J. Rosenau.

CAMPS FOR MEDICAL RESERVE CORPS.—Ft. Riley, Kas.; Ft. Benjamin Harrison, Ind., and Ft. Oglethorpe, Ga., have established camps for the Medical Reserve Corps and will accommodate seven hundred. Three months covers the full course of training, the first devoted to drill as enlisted men, the second to book work,

and the third to field practice. The first is regarded as essential, but, if necessary, the last and even the second month's training will be omitted.

MOBILIZING THE MEDICAL RESERVE CORPS.—There were recommended to the adjutant-general of the army for commissions in the Medical Reserve Corps, during the week ending June 16, 1,032 medical officers, including ten majors, 117 captains and 905 lieutenants. From April 21 to June 16, 4,026 physicians have been recommended for commissions.

THE ROCKEFELLER FOUNDATION WAR FUND.—On May 3, the Rockefeller Foundation announced that it had appropriated \$475,000 to be spent in the United States for medical research and maintenance as the beginning of war work; \$400,000 for the continuance of relief activities now being carried on abroad; \$200,000 to the Rockefeller Institute for Medical Research for the equipment of the Carrel Hospital, and \$60,000 to the Rockefeller Institute, for the instruction of surgeons in new methods of diagnosis, for the preparation of serums, and to find improved means for treating peritonitis and shock.

LARGE SUM FOR HEALTH WORK.—Framingham, Mass., has been chosen by the Metropolitan Life Insurance Company upon which to expend \$100,000 for an intensive health supervision. The work is under the direction of Dr. Donald B. Armstrong and other trained, well-educated and experienced health officers. Part of the plan proposed is to place under definite control every case of tuberculosis, with the idea of demonstrating that, with the proper funds, the disease can be eradicated.

THE ASSOCIATION FOR THE STUDY OF INTERNAL SECRETIONS.—On June 4, 1917, this new association was organized at a meeting held in New York City, and the following officers were elected: President, Dr. C. deM. Sajous; vice-presidents, Dr. W. S. Bainbridge, New York, and Dr. Harvey Cushing, Boston; secretary-treasurer, Dr. Emil Goetsch, Baltimore. Drs. F. M. Pottenger, D. F. Barker, Judson Daland, L. R. DeBuys, Walter Cannon, G. H. Hexie, John B. Potts, Walter Timme and R. G. Hoskins were selected as councilors.

REORGANIZATION OF COMMITTEES.—On July 3 a meeting of the State Committee of the Red Cross and of the State Committee on Medical Preparedness, acting under instructions from the Council of National Defense and the Red Cross Society, held a

meeting for the purpose of reorganization. Dr. Isadore Dyer, of New Orleans, was elected chairman of the new committee, to be called the State Committee of National Defense, Medical Section. Dr. L. R. DeBuys was elected secretary-treasurer. The chairman was authorized to appoint an executive committee of five members.

PERSONALS.—Miss Grace Gazette, of Chicago, who has recently invented appliances for the treatment of difficult fractures, has been decorated with the cross of the Legion of Honor for services in the French hospitals.

Dr. George Dock, formerly of Tulane School of Medicine, but now professor of medicine of Washington University (St. Louis), has received the French war cross for his service in moving wounded soldiers under heavy bombardment while engaged in American Field Ambulance Service.

Dr. Thomas E. Wright, Monroe, La., a Tulane graduate, class '09, has been appointed a member of the Louisiana State Board of Medical Examiners.

The physicians who comprise the medical department under Gen. Pershing are: Col. Alfred E. Bradley, surgeon; Col. Marriette W. Ireland, Major George P. Peed and Capt. Henry Beeuwkes, assistants.

Dr. L. R. DeBuys, secretary-treasurer of the Louisiana State Medical Society, has recently been honored by the following elections: Chairman, Section on Pediatrics; member of the American Pediatric Society, and member of the Council of the American Association for Milk Inspection.

Past Assistant Surgeon Cary T. Grayson has been appointed medical director, with rank of rear admiral, which gives Dr. Grayson the highest rank in the Medical Corps of the Navy. Surgeon-General Wm. C. Braisted is the only other officer holding this rank.

REMOVALS.—Dr. J. W. Dupuis, from Charity Hospital, New Orleans, to Thibodaux, La.

MARRIED.—On June 20, 1917, Dr. Sidney D. Porter, of New Orleans, to Miss Nellie Spyker, of Baton Rouge.

On June 28, 1917, Dr. E. B. Middleton, of Heflin, La., to Miss Ruth Brown, of Homer, La.

BOOK REVIEWS AND NOTICES

All new publications sent to the JOURNAL will be appreciated and will invariably be promptly acknowledged under the heading of "Publications Received." While it will be the aim of the JOURNAL to review as many of the works accepted as possible, the editors will be guided by the space available and the merit of respective publications. The acceptance of a book implies no obligation to review.

Reference Handbook of the Medical Sciences. Third edition, completely revised and rewritten. Edited by Thomas Lathrop Stedman, A. M., M. D. Vol. 7. William Wood & Co., New York, 1917.

The usual array of distinguished contributors is to be found in this volume of the Handbook, and the general character of the articles is up to the standard of this excellent reference work. The illustrations are judiciously selected and placed, and, as each article is written by an author who is qualified to speak on the subject, the whole book may commend itself as worthy of a place in the library of the modern physician.

DYER.

State Board Questions and Answers. By R. Max Goepp, M. D. Fourth edition. W. B. Saunders Company, Philadelphia and London, 1917.

Over six hundred pages in the volume are devoted to the compilation of questions asked by State Boards of Medical Examiners, or likely to be asked by them. These questions are presented with answers concisely arranged, so as to put the main point or points of the subject in a single paragraph. The usefulness of such books may be debatable, but the material has, none the less, been well arranged and carefully selected.

DYER.

Practical Medicine Series. Vol. IX. **Skin and Venereal Diseases.** Edited by Oliver S. Ormsby, M. D., and James Herbert Mitchell, M. D. The Year-Book Publishers, Chicago.

These two editors are new to the Practical Medicine Series, and their accession is noteworthy. The arrangement of material and the scope show the result of editorial change. The large number of subjects and the character of digest and review adopted in these books should make them desirable to those men who do not have access to original sources of information.

DYER.

The Maintenance of Health in the Tropics, by W. J. Simpson, C. M. G., M. D., F. R. C. P. Wm. Wood & Co., New York.

A good deal of practical information is contained between the covers of this little book, written by a man who has evidently had the experience of tropical countries. It is particularly intended for the layman, and the wholesome advice given may be followed.

DYER.

A Treatise on Diseases of the Skin, by Henry W. Stelwagon, M. D., Ph. D. Eighth edition. W. B. Saunders & Co., Philadelphia and London.

It is always a privilege to receive a new edition of this standard text-book on skin diseases and to remark its constant revision, not only in the reading text, but in the acknowledgment of contemporaneous literature relating to medical subjects. We consider this the representative American text-book on dermatology, and so commend it.

DYER.

Gunshot Injuries, by Col. Louis A. LaGarde, U. S. Army. Prepared under the direction of the Surgeon-General, U. S. A., and published by the authority of the Secretary of War. Second edition. Wm. Wood & Co., New York.

A masterly volume of 450 pages of intensely interesting and instructive reading, bringing its subject squarely up to date. Contains a wealth of material gathered from the present European war, giving full descriptions of the immediate effect, complications, sequelæ and results of treatment of all gunshot injuries. The treatment of these wounds, as modified to meet the condition of the present war, is thoroughly discussed from the "First-Aid Treatment" to the subsequent hospital treatment of the badly lacerated and infected wounds, both by the Lorrain Smith eusol and eupad solutions of hypochlorous acid with the Carrel modification in the treatment, and hypertonic salt solution of Sir A. E. Wright. This subject, which has created so much interest of late, is amply discussed in a chapter devoted to the subject.

Knowledge and information gained from all the wars of the world, from our great Civil War down to the present time, with the different kinds of wounds inflicted by the different projectiles from different kinds of rifles; injuries in civil life, on the battlefield, and as received by big game hunters, are well presented in an attractive and fascinating style.

The book opens with a description of firearms of all kinds, from the earliest inventions down to the present time. Explosions, projectiles, their motion and trajectory, are all ably presented. Many of the definitions which are given may somewhat modify the views and ideas of the civil surgeon. For instance, a gunshot wound in medico-military parlance means any wound—the result of any missiles set in motion by a sudden expansive force, which may be either a rifle, gun, mine, torpedo, or any engine or implement used in war.

The chapter on injury to the cranial, thoracic, abdominal and joint cavities makes most interesting and instructive reading, and presents a very thorough discussion of the subject, both in civil and military surgery. In this chapter little has escaped the author, and in summarizing reports from civil life we find the names of many of our local men: T. G. Richardson, A. B. Miles, Rudolph Matas, W. E. Parker, E. D. Fenner, H. R. Shands, C. W. Allen, and others.

The chapter on injuries to blood vessels and nerves is particularly instructive. The chapter on the casualties of battles gives the figures in all wars during the last century, and includes the figures so far obtained in the present war, the relative proportion of wounds by different arms, the relative proportion of wounded to killed, and other interesting statistics and data. A chapter on the medico-legal phases of "gunshot wounds" is very instructive and interesting. The most practical and useful field X-ray apparatus is also discussed.

Many useful and instructive illustrations and a thorough index complete this valuable work, which should be in the hands of all medical men interested, or who are likely to see service in the present war. It is not alone to these, but to the civil surgeon as well, that the book will prove of great practical value.

CARROLL W. ALLEN.

The Clinics of John B. Murphy, M. D. December, 1916. W. B. Saunders Company, Philadelphia and London, 1917.

The December, 1916, number of *Murphy Clinics*, the closing number of the year, contains much of interest regarding the closing days of that great surgeon and teacher: an interesting preface by the editor, and

memorial addresses by Drs. Wyllys Andrews, J. F. Binnie, Geo. W. Crile, John B. Deaver, Sir J. Goodlee, Sir Arbuthnot Lane, Ernest Laplace and Edward Martin. Particularly interesting is the medical history of his last illness by Drs. Mix, Babcock, Keefe and Evans, containing a very full and detailed necropsy report, in which are verified the prediction of Dr. Murphy that he was suffering from plaques in the aorta. Dr. Murphy was much concerned about his sickness, and had studied his own case very closely, and felt that his end was near. In this prognosis and his diagnosis he was more correct than some of his medical attendants, who were loath to believe that their distinguished patient was so ill. This part of the volume will always remain a memorial to its distinguished author. It is not alone in the above that the volume is interesting, as it contains much medical matter taken from the last clinic of that eminent teacher, which shows the brilliancy and enthusiasm and thoroughness so characteristic of the man, and covers a wide range of subjects. There is also a series of unclassified illustrations showing certain phases of Dr. Murphy's work, with a full list of his writings.

ALLEN.

The Starvation Treatment of Diabetes, With a Series of Graduated Diets, by Lewis Webb Hill, M. D., and Rena S. Eckman, dietitian, Massachusetts General Hospital, with an introduction by Richard C. Cabot, M. D. Third edition. W. M. Leonard, Boston, 1917.

The appearance of this, the third, edition in so short a time indicates the merited popularity of this little book. There is a great deal of practical help in its table and recipes, as well as in the details of the illustrative cases. However, it seems to the reviewer that the criticism made by him of the former edition is more than ever true, namely: that the work lays too much emphasis upon a rigid scheme of diet. All plans for the treatment of diabetes must be flexible and provide for individualization. The publication of a series of successive diets, Table I, Table II, etc., conveys the impression that all that is necessary for success is to follow this rule of thumb and give these diets on successive days to each and every patient. Such doctrine is pernicious, and is, of course, not intended by the authors. At the same time, the unthinking application of their scheme is likely to bring into disrepute a valuable method of treatment.

I. I. LEMANN.

The Internal Secretions, Their Physiology and Application to Pathology, by E. Gley, M. D., member of the Academy of Medicine, Paris; Professor of Physiology in the College of France, etc. Translated from the French and edited by Maurice Fishberd, M. D., Clinical Professor of Medicine, New York University, and Bellevue Hospital Medical College, etc. 241 pages. Paul B. Hoeber, New York.

Prof. Gley's lucid, simple style has been well preserved by the translator. The relative brevity of the work brings this authoritative exposition of an important field of medicine within the reading-time limit of "the busy practitioner who wants to inform himself about the present status of the theory of internal secretion and its application in every-day practice." To him the perusal will bring charm and profit.

I. I. L.

The Practical Medicine Series, under general editorial charge of Charles L. Mix, M. D. Vol. I. **General Medicine**, edited by Frank Billings, M. S., M. D., and Burrell O. Raulston, A. B., M. D. Series 1917. The Year-Book Publishers, Chicago.

This excellent year-book is always welcome. The choice of topics for review is excellent and the synopses are always adequate and well done. The convenient form of the little book adds to its desirability. I. I. L

PUBLICATIONS RECEIVED

W. B. SAUNDERS COMPANY, Philadelphia and London, 1917.

Obstetric and Gynecologic Nursing, by Edward P. Davis, A. M., M. D., F. A. C. S. Fifth edition, thoroughly revised.

Collected Papers of the Mayo Clinic. Edited by Mrs. M. H. Mellish. Vol. VIII, 1916.

Diagnostic Symptoms in Nervous Diseases, by Edward Livingston Hunt, M. D. Second edition, revised.

J. B. LIPPINCOTT COMPANY, Philadelphia and London, 1917.

International Clinics. Volume 11. Twenty-seventh series, 1917.

LEA & FEBIGER, Philadelphia and New York, 1917.

Progressive Medicine. Edited by Hobart Amory Hare, M. D., assisted by L. F. Appleman, M. D. June 1, 1917.

PAUL B. HOEBER, New York, 1917.

Glaucoma, by Robert Henry Elliott, M. D., B. S., Sc. D., F. R. C. S.

C. V. MOSBY COMPANY, St. Louis, 1917.

Röntgen Technic (Diagnostic), by Norman C. Prince, M. D.

Physical Exercises for Invalids and Convalescents, by Edward H. Ochsner, B. S., M. D., F. A. C. S.

G. P. PUTNAM'S SONS, New York and London, 1917.

Some Personal Recollections of Dr. Janeway, by James Bayard Clark.

H. K. LEWIS & CO., Ltd., London, 1917.

Congenital Word-Blindness, by James Hinshelwood, M. A., M. D., F. R. F. P. S.

WASHINGTON GOVERNMENT PRINTING OFFICE, Washington, D. C., 1917.

Mortality Statistics (1915). Sixteenth Annual Report. (Department of Commerce, Bureau of the Census.)

Public Health Reports. Volume 32, Nos. 23, 24, 25 and 26.

United States Naval Medical Bulletin. July, 1917.

Report of the Health Department of the Panama Canal. April, 1917.

MISCELLANEOUS.

Proceedings of the Medical Association of the Isthmian Canal Zone. January, 1916, to June, 1916. Vol. IX, Part 1. (Health Department, Panama Canal.)

Japanese Medical Literature. Vol. 11. Part 2.

Office International D'Hygiene Publique. Bulletin Mensuel. Tome IX, Fascicule 4.

Department of Health, City of New York. Special Investigation of Poliomyelitis, 1916.

REPRINTS.

Original Contributions of Louisiana to Medical Sciences: No. 1, **A Biographic Study**; No. 2, **A Bibliographic Study.** By Edmond Souchon, M. D.

Preservation of Anatomic Dissections With Permanent Color of Muscles, Vessels and Organs. By Edmond Souchon, M. D.

Military Hygiene: The Scientific and Administrative Achievement of the Medical Corps of the United States Army, by Lieut.-Col. Champe C. McCulloch, Jr., U. S. Army.

The Menace in Suppurating Ears, by Ben Clark Gile, M. D.; **A Foreword to the Would-Be Lip-Reader,** by Virginia Sinclair; **Deafness of Soldiers.** Volta Bureau, 1601 Thirty-fifth Street, N. W., Washington, D. C.

Emetine Bismuth Iodide in Amœbic Dysentery, Amœbic Hepatitis and General Amœbiasis; Intravenous Injections of Antimony in the Treatment of Malaria, by George C. Low, M. A., M. D.

The Present and Future of Narcotic Pathology, by Charles B. Towne.

The Surgical and Non-Surgical Treatment for Intestinal Stasis, Constipation and Diarrhea, by Alcinous B. Jamison, M. D.

Botanical Nomenclature of the U. S. P., IX.; Botanical Nomenclature of the N. F., IV, by Oliver Atkins Farwell.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for June, 1917.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	6	6	12
Intermittent Fever (Malarial Cachexia)			
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough	1		1
Diphtheria and Croup	1		1
Influenza	1	1	2
Cholera Nostras			
Pyemia and Septicemia		1	1
Tuberculosis	42	60	102
Cancer	21	11	32
Rheumatism and Gout	1		1
Diabetes	4	1	5
Alcoholism	2		2
Encephalitis and Meningitis	3	2	5
Locomotor Ataxia	1		1
Congestion, Hemorrhage and Softening of Brain	21	10	31
Paralysis	3	1	4
Convulsions of Infancy		1	1
Other Diseases of Infancy	9	15	24
Tetanus			
Other Nervous Diseases	5	1	6
Heart Diseases	45	46	91
Bronchitis	3	3	6
Pneumonia and Broncho-Pneumonia	14	14	28
Other Respiratory Diseases	4	2	6
Ulcer of Stomach	3	1	4
Other Diseases of the Stomach	1	3	4
Diarrhea, Dysentery and Enteritis	25	23	48
Hernia, Intestinal Obstruction	1	3	4
Cirrhosis of Liver	9	5	14
Other Diseases of the Liver	3	1	4
Simple Peritonitis		1	1
Appendicitis	5	2	7
Bright's Disease	40	24	64
Other Genito-Urinary Diseases	15	10	25
Puerperal Diseases	6	3	9
Senile Debility	2	1	3
Suicide	8	1	9
Injuries	16	22	38
All Other Causes	16	16	32
TOTAL	337	291	628

Still-born Children—White, 25; colored, 21; total, 46.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1000 per Annum for Month—White, 14.66; colored, 34.23; total, 19.93. Non-residents excluded, 17.21.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure. 30.05
Mean temperature. 80
Total precipitation. 2.77 inches
Prevailing direction of wind, southwest.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITORS:

CHARLES CHASSAIGNAC, M. D.

ISADORE DYER, M. D.

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JOHN M. SWAN, M. D., Secty. American Soc. of Tropical Medicine..... }
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Vol. LXX

SEPTEMBER, 1917

No. 3

EDITORIAL

THE HIATUS.

"There is no provision in the law under which medical students can be exempted or discharged."

*Compiled Rulings of Provost Marshal General E. H. Crowder,
Washington, D. C., July 30, 1917.*

The combined intelligence of the Council of National Defense, the Medical Departments of the Military Services of the United States, medical educators, representatives of the medical service of foreign governments, and a common sense apprehension of the dangers of drafting medical students have so far failed to alter the ruling quoted above, or to qualify it in such a degree as to correct an obvious mistake in administrative enactment.

It is almost impossible to view the outlook calmly, for it will not be easy to undo the harm about to be consummated. The medical

student has been a veritable shuttlecock in the game. At first solicited and stimulated to join the officers' training camps or other preferred services, he was abruptly ordered to remain at his studies as a patriotic duty. Now he is drafted as other youths of his age, with the direct information that he may have no preference of service in the medical division of the army, but must go where and as assigned.

At this writing there would seem to be no recourse and the constituted authorities are apparently not inclined to make any concessions.

It is true that the first demand on medical students as part of the first contingent of the National Army will affect only a part of the student body *directly*, probably then not more than thirty or forty per cent. It is certain, however, that the balance of the student body will be seriously disturbed if not disorganized.

They are faced with the condition of a later draft and a forced interruption of their medical studies and this naturally occasions the deliberation as to the futility of commencing such a career. The alternative has already been adopted by quite a number of medical students and more will follow as the opportunity is afforded to enroll in the officers' training camps.

To medical schools richly endowed or liberally supported by state allowances, a smaller number of students will have no serious effect upon the administration. It will be otherwise with those schools more or less dependent upon the student attendance. Professors cannot be paid without revenue and laboratories need money for their efficient conduct.

It is perfectly logical to argue that a few medical schools may be sufficient to take care of the students who may survive, but what of the faculties of the other schools which may be forced out of operation?

There is another side, and more important, which has not been emphasized as forcibly as it should be.

The need of medical officers for the Army and Navy will probably total some 30,000 men or something like twenty-five per cent of the existing medical profession.

It is now estimated that the profession in the United States is inadequate for the civil population, including the hospitals; with twenty-five per cent reduction there will be just that much more deficiency.

With a sixty per cent reduction (at least) in medical student attendance at medical schools, it must be figured that for the next six years the annual output of physicians will be as 1500 compared with nearly 4000 now.

It will require more than six years to re-adjust the deficiency, for as it is the study of medicine is less and less attractive to the young man who realizes the outlay in time and in money for the preparation before he can begin to make a living. It will require extraordinary means to bring enough medical students back to the schools in order to make up the ranks of those who have suffered the experience of war.

Meantime many medical schools must cease to operate thru lack of students and of support. They may not reopen.

In the rigid enforcement of a draft in which the exception of medical students is not made it must be calculated that there will be a hiatus of four to seven years during which the whole United States must suffer thru an inadequate supply of doctors. It is not too late to remedy the growing mistake, and it will require no historian to record the distress and its occasion if the mistake is not corrected.

NOBLESSE OBLIGE.

Already there are signs of the evil days of war. Glory awaits the physician who is patriot enough to respond to the country's call for his service. An honorable detail lies before him and hereafter he will be proud of the memory of the work for righteousness and the future will accord him a place in the history of this time.

But all of this does not protect the industry he has established at home, after years of study and more years, perhaps, of labor. His household gods have been well fostered and he leaves them for the sake of honor. Who will protect them against the time of his return?

This question comes to all who are going to the front. There are few physicians who can, when the war ends, begin anew and hope to reach their present state in a short time.

It is the business of those who must and who choose to stay at home to see that the practice of those who go is saved.

There will be some of the conscienceless who may seek to advantage themselves of the opportunity afforded by the departure

of a successful practitioner, but here lies the duty of state defense and parish organization. The men of each community should report the absence on duty of any medical men in the locality or in the Parish to the local Chairman of the Auxiliary Committee on National Defense, or to the Parish Society. Newcomers to the community should be likewise reported.

The profession in some states already has undertaken the protection of the interest of the men who go.

If groups of practitioners everywhere will agree to take charge of the patients of the absent profession, keeping accurate accounts of the business and banking the returns for safety's sake, an adjustment of interest can be arranged duly. Such proceeding would create a proper estimate of the morality of the profession in the minds of the laity. If the patient of a doctor absent on military duty knows he will be cared for as that doctor's patient, he will spread the gospel of "*Noblesse oblige*."

PROHIBITION AND PATENT MEDICINES.

The daily press informs us that a campaign against the publication of misleading advertisements of patent medicines has been inaugurated by Dr. Dowling, President of the Louisiana State Board of Health. The advertising and marketing of such of those medicines as are deemed fraudulent will be controlled thru an arrangement between the State Board and various business organizations, druggists, etc. This campaign should receive the aid of the profession and is likely to meet with success if carried on with determination. We shall be glad to aid in any way that we may think possible or that may be suggested to us.

Somewhat in line with this and of equal importance would be the control of patent medicines containing large proportions of alcohol. Now that the prohibition of the use of alcohol has attained war time proportions, it would seem necessary to include in the movement all so called medical preparations containing more than a given percentage of alcohol, as, otherwise, it can be readily understood that the object of the law would be defeated to a great extent and that an extraordinary stimulus to the sale of vile and dangerous nostrums would follow.

Our State Health authorities would do a creditable and useful act by leading in the movement referred to above and in seeking to obtain national co-operation.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

HEMATURIA: ITS CLINICAL SIGNIFICANCE.*

By H. W. E. WALTHER, M. D., New Orleans.

The voiding of bloody urine is a condition which not infrequently brings a patient to the physician seeking relief. That physicians as well as patients have been prone to disregard the seriousness of this symptom in the past is daily demonstrated in our urological clinics and in the private records of genito-urinary surgeons. That hematuria frequently occurs and persists over a period of months, and in some instances years, without concomitant subjective symptoms, undoubtedly accounts for the fact that patients often delay seeking surgical aid until the diseased condition causing the hematuria has advanced to such a stage as to be beyond remedy. I say *surgical aid* because, in the vast majority of these cases, relief can only be obtained from surgical intervention.

The custom, so prevalent, of the attending physician administering drugs, either by mouth or locally, for a symptom-complex, of the etiology of which he is ignorant, is a practice which cannot be too severely condemned. Exceptional instances may arise where first aid may be rendered, as in cases where the attendant fears that the immediate hemorrhage might prove fatal. By putting these patients to bed and administering sedatives, many of these hematurias will check, at least temporarily. Then—and the sooner the better—a careful study of the case should be made to establish the exact origin and the cause of the blood. If the attending physician is not properly equipped to do this work he should call in some one who can.

The fact must ever be borne in mind that, in a high percentage of cases, hematuria is the first and only symptom of malignancy somewhere along the urogenital tract. Like many other truisms, in medicine this fact should be shouted from the housetops. The laity as well as the medical profession should be apprised of this

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

fact. For years we have been taught that profuse and persistent hemorrhage from the uterus is a dangerous symptom to ignore; that a tumor in the breast should always be promptly removed. Then, why temporize with so serious a symptom of derangement in the genito-urinary tract when it, too, may mean malignancy?

That one occasionally meets with a case of so-called essential hematuria, in which no definite demonstrable cause for the bleeding can be found, should not deter us from giving every case the benefit of a doubt and insist that a thorough urological examination be made and every effort exerted to find the origin and causation of the blood.

Whereas formerly it was no easy matter for one to determine definitely the origin of the hemorrhage with any degree of accuracy, to-day, with the aid of modern diagnostic instruments, we can locate the source of the bleeding, and, with few exceptions, determine the cause. When we consider that hematuria may mean a lesion in either the urethra, prostate, seminal vesicles, bladder, ureters or kidneys, it should be obvious that something more refined than the "glass tests" or a urinalysis alone is required. Not that urinalysis is valueless, for, unless it is performed in a routine manner and specimens of centrifugalized sediment are examined microscopically, one may fall into error. Hemoglobinuria may be the cause of the red-tinged urine; in some instances this color is due to the ingestion of such drugs as senna, rhubarb or sulphonal.

The urethroscope, the cystoscope and the ureteral catheter are the diagnostic aids which enable the urologist to locate the source of the trouble. It is not possible, however, in every case, to arrive at a definite conclusion from a single cystoscopy. It will often require repeated cystoscopic examinations to locate the source of the blood.

Hematuria is encountered most frequently in cases of tumor, calculus, tuberculosis or infection (non-tubercular) somewhere along the genito-urinary tract. Trauma to any portion of this tract also frequently results in the voiding of bloody urine. While the initial symptom of nephritis is occasionally claimed to be bloody urine, I have not personally observed any of these cases. Malarial hematurias have been reported in the literature, but their authenticity has been questioned. It is quite probable that some of these cases were malarial hemoglobinurias. The terminal hematuria of acute posterior urethritis is so common and is usually so easily

recognized that it will not be considered here further than to mention same.

From my personal records I have been able to collect seventy-eight cases of hematuria which have come under my observation. As it should be of some interest to record the various conditions which caused the bleeding, as well as the location of the various lesions, I have made the following tabulation:

	No. of Cases.		No. of Cases.
Carcinoma of bladder	19	Chronic spermatoecystitis	2
Benign papilloma of bladder	7	Urethral calculus	2
Carcinoma of prostate	7	Bladder varix	1
Renal tuberculosis	5	Neisserian cystitis	1
Ureteral calculus	4	Renal cyst	1
Bladder calculus	4	Edema bulosum of bladder	1
Essential hematuria	4	Ruptured bladder	1
Pyonephrosis	3	Urethral ulcers	1
Renal calculus	3		—
Chronic cystitis	3		74
Benign papilloma of urethra	3	Diagnosis undetermined	4
Hematuria of pregnancy	2		—
			78

As will be noted in the tabulation, no positive diagnosis was made in four of the cases, due to the fact that the patients refused instrumental examinations. This leaves seventy-four cases to be analyzed.

Tumors of the genito-urinary tract were the most frequent cause of hematuria, occurring thirty-six times, or in 51 per cent of cases. Of these tumors, nineteen were carcinoma of the bladder, seven were benign papilloma of the bladder, seven were carcinoma of the prostate, and three were benign papilloma of the urethra.

Urinary calculi were second in point of frequency, occurring thirteen times, or in 19 per cent of cases. They were divided as follows: Renal calculi, three cases; ureteral calculi, four cases; bladder calculi, four cases, and urethral calculi, two cases.

The next most frequent lesion was renal tuberculosis, being present five times, or in about 7 per cent of cases.

There were four cases of so-called essential hematuria. This is a condition in which bleeding occurs from one or the other kidney (rarely from both synchronously) and where no other pathology can be demonstrated, either by cystoscopy, microscopy or Röntgenography, other than the presence of red blood cells in the urine. To such cases the term "essential hematuria" has been given. We

might as well acknowledge our diagnostic limitations. The etiology of this type of hematuria has not yet been determined.

In this series were three cases of pyonephrosis, two each of hematuria of pregnancy and chronic spermatocystitis, and one each of renal cyst, bladder varix, edema bulbosum of bladder, gonorrheal cystitis, ruptured bladder, and urethral ulcerations.

CONCLUSIONS.

1. A study of seventy-four cases of hematuria demonstrates the marked prevalence of tumor of the genito-urinary tract, especially in its relation to malignancy. Of all these tumors, 72 per cent were cancer.

2. The frequent occurrence of symptomless hematuria, associated with urogenital malignancy, should impress upon all the importance of early cystoscopic examination, so as to exclude this possibility.

3. The seriousness of hematuria as a symptom, and the necessity of determining its cause, should be impressed upon each patient suffering with urinary hemorrhage.

DISCUSSION ON THE PAPER OF DR. WALTHER.

Dr. A. C. King, New Orleans: While Dr. Walther was reading his paper he made the diagnosis of a case I operated on eighteen years ago. That is a curious statement to make, but it is a fact. I have often wondered what is meant by the expression, "essential hematuria," and the doctor explained it very clearly. It seems it is one of the conditions we have to meet with occasionally, and the case I have reference to was an Italian woman, who had hemorrhage after hemorrhage, not of a violent type, but it just kept on recurring. That was before the days of the specialist in genito-urinary work, or rather before they had acquired the skill which they possess in this day and time, and the only way to make that diagnosis was to guess at it. We guessed it was necessary to remove the kidney of this patient. She complained of a good deal of pain on the right side, and I suspected kidney-stone, or, at least, ureteral stone. She had had at that time four or five children, so we got busy and removed the right kidney. We cut down on the kidney, expecting to find a pelvic stone, or something that would lead us to make a respectable diagnosis. We found nothing, but we removed the right kidney, and the kidney was perfectly good. As I have said, that woman had borne five children. Since then she has had no more hemorrhages and is perfectly well. I have often puzzled over that case, and I am pretty well sure it was one of these cases of essential hematuria. I do not know what else it was. Possibly I am correct in that, and possibly I am not. However, it has been puzzling to me up to this time, and I am obliged to Dr. Walther for helping me make the diagnosis.

Dr. Walther (closing): I thank Dr. King for his discussion. There is only one point I wish to bring out regarding essential hematuria,

namely: the genito-urinary man, who is supposed to be delving in nothing but kidneys and ureters, as far as the upper abdomen goes, should be able to tell more about the kidneys than the man who does everything. But, as I said in my paper, the genito-urinary man must acknowledge his limitations in certain matters, and essential hematuria comes at the top of the list. We may be able to confirm the diagnosis of the general practitioner at times; he may send us a case which he thinks is essential hematuria, but after we have gone over it we do not like to say that we can see no more than he does. There is not much satisfaction in that. We should be of aid to the general practitioner and of appreciable aid to the surgeon, so far as he can determine what to do. Nephrotomy, nephrectomy, or the more simple cystoscopic methods, lavaging the affected kidney with adrenalin chlorid, etc., and using intravenous injections of the various preparations of blood platelets, and so on, have availed us nothing in genito-urinary work. Nephrectomy, at times, is a life-saving measure for these cases, but is it good surgery? Last week a prominent surgeon called me in consultation to see a case of hematuria, the man having bled for two years. He had a hemoglobin of 30 per cent, had lost forty pounds in the last six months, and had to be carried into the hospital. What is to be done in a case like that? This kidney was split from pole to pole, and a healthier kidney you never saw. The kidney was taken out and pronounced by the pathologist chronic infective nephritis. The other kidney was all right, so far as the phthalein test and the urine urea were concerned. It might have been a life-saving measure in this case, but oftentimes we will get cases where simply splitting the kidney from pole to pole and mattressing it with sutures will stop hemorrhage once and for all. Where we have a case under observation, and can do that, is it not better, in some instances, to split the kidney from pole to pole, put in mattress sutures, close, and put it back and see what happens? It can be taken out at a subsequent date if necessary.

The main point of my paper concerned malignancy of the genito-urinary tract and its relation to hematuria. Bloody urine is a serious problem. A great many of you may know it, but to those who do not know it I would like to say, as emphatically as I can, **that blood in the urine is a dangerous thing.** We read medical journals in which Bloodgood, of Baltimore, and others are preaching for us to get cancer early and do something for our patients. If you want to keep patients out of the grave, get to the bottom of the hematuria. Do not give them something internally or intravenously to stop bleeding. These bleedings or hemorrhages frequently stop of their own accord. Sometimes you give an injection of something and the hemorrhage stops, and if you did not give the injection the hemorrhage would have stopped anyway.

I saw a man three years ago, in a small town in Louisiana, who had been urinating blood for fifteen years; he had been under the observation of doctors and not one physician had recommended the use of the cystoscope. He came to the Charity Hospital genito-urinary service with an inoperable carcinoma involving the entire bladder. What was the condition fifteen years ago? It might have been at that time an innocent or benign papilloma of the bladder, which could have been destroyed in three or five minutes with the high frequency spark, never to return. We have some of these cases under our observation five years, and they have not returned. These things are potentially malignant and kill men.

GUNSHOT WOUNDS OF THE EXTREMITIES.*

By J. C. WILLIS, M. D., and A. B. NELSON, M. D., Shreveport.

In consideration of the subject of gunshot wounds of the extremities, we deem it necessary to deal only with the wounds inflicted by such instruments as we have to deal with, and not so much from the standpoint of the army surgeon, because most of us do general practice; so that we shall consider wounds inflicted by the rifle, shotgun, pistol and toy pistol.

In the extremity a gunshot wound may involve only the soft tissue, or it may involve both soft tissue and bone. The entrance wound of a bullet is usually smaller and more clean-cut than the exit wound. It may be umbilicated or inverted, while the other is lacerated and more or less everted. Wounds of the soft tissue may show perforations in the tendons and the fascia. The tendon, however, may be cut across if the bullet should strike it from the side.

Nerves may be severed in the same way as the tendon. Nerve lesions are divided into: first, concussion; second, contusion; third, partial division; and, fourth, complete division. Concussion results from the vibratory effects of projectiles, or particles of bone which become secondary missiles from the force of the bullet. Complete loss of function, both motor and sensory, may be the result of concussion on an individual nerve; even muscular atrophy may result to some extent. There may be, however, only slight anesthesia of the parts supplied by the nerve.

In a contusion, real injury has been done the nerve and it is more serious. The loss of motion and sensation is not complete. Trophic changes appear, such as redness of the skin, loss of hair, pain in the form of neuritis, and, maybe, club-nails and polished skin. In partial division of the nerve we have the same symptom complex, as in contusion. Complete division of the nerve usually occurs in the smaller nerves of the parts; a larger nerve is rarely severed completely. Here, we have complete loss of motion and sensation, at once, and lasting indefinitely. Of course, trophic changes take place and persist.

With the former large lead bullet, the blood vessels seem to escape miraculously, but with the steel-jacket bullet, which cuts its way more or less, the small vessels may be severed entirely, the larger ones button-holed or perforated. We may have, as the result

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of the wounding of a vessel, a severe external hemorrhage, a traumatic aneurysm, or a concealed hemorrhage. The latter is caused by the change in the position of the fascia and muscle, after the perforation has been made and the obstruction to the external flow of the blood is brought about. Of course, if the circulation is sufficiently interfered with, pulsation in the distribution of the vessel is lost, and gangrene will supervene.

The injury from a shot-gun wound is dependent upon the size of the shot and the distance from the object. Buckshot might be classified as just so many bullets; a smaller shot, if some distance away, will not do very much damage to the extremities. However, if at close range, we may have an ugly lacerated wound containing wads, parts of clothing, blood clots, shot, and fragments of bone, as well as soft tissue, especially muscle.

Toy pistol wounds, as a rule, are inflicted upon the extremities of children. The development of tetanus in these cases is common, due to the fact that children, when wounded in this way are usually playing in the streets, where their hands are already contaminated.

The damage done to a bone by a bullet is dependent upon the velocity of the bullet, and the density of the bone. Hence, the diaphysis of the long bone struck by a bullet going at a high rate of speed produces the greatest possible amount of damage that can be done to a bone by a bullet. The momentum of the bullet is given off to the particles of bone shattered from the shaft, and they become secondary missiles contusing, and lacerating the soft tissue at the exit. So much damage has been done in this way to the soft tissue that it was thought that dum-dum bullets were being used, when it was only the ordinary bullet. If the force of the bullet is practically spent, it may only break the bone and the bullet will lodge. Fractures from gun-shot wounds, however, are rarely transverse, but usually comminuted fractures.

In the spongy portion of the bone near the joints, the wound in the bone may be merely a round hole through the bone, or it may split the bone up the shaft some distance. These wounds are not so serious, due to the fact that the resistance to the bullet is not so great. Sections of the bone may be shot away by a shot-gun at close range, even the entire extremities may be mangled.

Joint Wounds: The vibratory effect on a joint seems to be similar to that of a nerve, when a bullet passes through the neighboring tissues, and the condition is known as vibration synovitis.

A bullet may enter the joint and lodge there, or it may pass entirely through the joint, perforating the articular end. However, damage may be done to the soft tissue only about the joint, as a perforation, or a tear in the capsule of the knee. Comminution occurs when the wound is received at short range, either from a shot-gun or from a high powered rifle, at which time the soft tissue and the bone suffer great destruction. The most positive sign of a joint injury is the escape of synovial fluid. Fissures from an adjoining fracture may extend into the joint, as might occur in any other fracture, and joint in that way, become infected.

The sensation on receiving a gun-shot wound is not that of pain so much as it is a blow followed by a burning or a stinging sensation, occasionally, there is more or less anesthesia, and the patient is not sensible of having been shot until he or someone else sees the blood. If pain be present, it is usually at the point of exit. It is sometimes referred to at a point remote from the seat of injury.

In a gun-shot injury of any consequence, the shock is marked. It may be very alarming in fractures when much comminution has taken place, or in shot-gun wounds inflicted at close range. The symptoms of shock are the same as from any other cause, as a rule. Instead of the mental apathy usually accompanying shock, there may be, however, great excitement. This is thought to be due to the state of the patient's mind at the time he received the injury.

TREATMENT.

In the treatment of gun-shot wounds of the extremity, we have to consider; first, the life of the patient; second, the loss of the limb; and third, the function of the limb. In the beginning, the treatment should be directed toward the management of shock, the arrest of hemorrhage, and the prevention of infection.

Shock: The following cardinal points should be kept in mind when dealing with a case of shock: the patient should be carefully watched for a recurrent hemorrhage, which is prone to take place as soon as the blood pressure is re-established; second, if the temperature falls to about 96 8/10 degrees F., the prognosis is grave; third, the thermometer should be the guide for the proper time to operate. All wounded who fail to recover their temperature in about four hours, should be considered among the seriously wounded, and unfit for immediate operation. Fourth, no operation is permissible in a state of shock, except the ligation of vessels to control the hemorrhage. The measure for the relief of shock

in these cases are the same as in shock from other cause, and are too well known for me to mention.

External primary hemorrhage, when alarming should be controlled at once by ligation, if practical, and if not, by clamping the vessel or by tourniquet. The clamp may remain until permanent ligation can be done, or until the second dressing is made; but the tourniquet should be removed within four hours, if at all possible. Intermediate hemorrhage is the result of the removal of a blood clot, or the giving way of the remaining wall of a blood vessel, or the increase of the blood pressure after shock, and should be dealt with as above described. Secondary hemorrhage rarely occurs in this day of modern surgery; the treatment of which is prophylactic. Ligation will be necessary, however, should it occur.

Suturing of the larger blood vessels may be practiced, provided not too much of the vessel is shot away, and provided we are reasonably sure that infection will not occur.

Diffuse traumatic aneurysm when demanding operative treatment, should be opened up and the clots turned out, and vessel ligated. If necessary, the vessel may be ligated on the proximal side of the tumor but some distance from the tumor. The circumscribed variety may be successfully treated by rest in bed. However, if they progress, it may be necessary to open the tumor, ligate on both sides of the sac, and dissect out the sac.

Von Nussbaum aptly said, "The fate of the wounded rests in the hands of the one who applies the first dressing." The gun-shot wound of today is more or less contaminated, depending on the nature of treatment, but usually less. In the vast majority of cases the local reaction will be able to take care of the infection, provided we do not contaminate the wound worse. It is true that from the nature of some wounds they form a perfect pabulum for the development of bacteria, because of their lacerated, contused condition. The anaërobic bacteria and especially tetanus and gas bacilli, thrive under such conditions. The treatment of these is entirely prophylactic when possible. The immunizing dose of the anti-tetanic serum, as well as its value, is too well known for me to discuss. A combination of antitoxin and salvarsan has been recently recommended for tetanus. In cases of gas bacillus infection, free drainage, that is free incisions in the part down to the muscles, free use of hydrogen peroxide and wet dressing or irrigations of permanganate of potassium should be energetically applied. All

ragged lacerated wounds should be cleaned out thoroughly under anesthesia, as soon as possible. By this, I mean to remove all wads, pieces of clothing, particles of bone, shot, blood clots, and all fragments of muscle tissue which are dead or which are liable to die.

Kenneth Taylor reports* a series of experiments, the results of which I must mention as follows;

First: The implantation of a sterile foreign body or a small piece of sterile dead muscle alone, produced no micropic lesion.

Second: The implantation of a foreign body infected with tetanus bacilli, *Staphylococcus aureus*, *B. aërogenes capsulatus* or streptococci, produced usually a localized abscess formation without invading the surrounding normal tissues.

Third: The addition of a small portion of dead muscle tissue in the region of the infection produced a more rapid and diffused inflammatory process, with earlier and more extensive abscess formation than the wounds containing only bacteria or those containing infected cloth.

Fourth: The implantation of infected cloth, together with muscle tissue produced a more active and destructive lesion than the implantation of either alone. When infected with tetanus bacilli, the presence of dead muscle fragments determined a high mortality.

Fifth: Of the two substances, cloth and devitalized muscle, in the presence of infection, the muscle produced the more active infective process.

Conclusion: The result of these experiments suggests that in the cleaning of fresh wounds at least as great care should be exercised to remove separated and divitalized fragments of soft tissue, as is taken to remove other foreign bodies.

Following such cleaning the very best procedure would be Carrel's Method of Irrigation with Dakin's Solution. This method must be carried out in detail to get the best results. (See *Southern Medical Journal*. December number.)

If in exploring a wound, we find a nerve severed, it would be better to suture the same. However, we are not justified in making an incision simply to investigate the condition of the nerve in a fresh gun-shot wound where considerable other damage has been done. If, however, there seems to be no improvement in the

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condition of the nerve at the end of one month, it may be necessary to examine this nerve, and if needed approximate the ends, or such part of the nerve as may be found and sutured. An anastomosis may be necessary in case of too great a portion of the nerve being gone. Cicatrix of soft tissue or callus from bone may include a nerve and freeing of the nerve be necessary. In case this is done, don't place the nerve in contact with same mass from which it has been removed, but place a flap of fascia and fat under the nerve and transplant it.

In an injury to the joint, fix the limb in such position that it will be most useful in case of ankylosis. Should hemorrhage take place in the joint, it should be drawn away by aspirating needle and under the strictest aseptic conditions. It may be necessary to resect the joint surfaces, or even amputate the limb.

In gun-shot fractures of the long bones where the probability of infection is not too great, the limb should be treated as in a closed fracture. The treatment of these fractures does not depend so much on whether or not they are comminuted, but upon whether or not they are infected. I have treated a number of compound fractures, not all of which were gun-shot wounds, but involving the same principles, and unless the damage to the soft tissue is too great we put them up in plaster with iodine and dressing with iodoform gauze to take care of any infection that might develop from the wound drainage, and in many of these cases we get union as in-closed fractures. In all operations done on bones, our dressing consists of iodoform gauze. The patient in the gun-shot fracture should be watched very closely and if any symptoms of septic trouble should arise, the wound is dressed through the window in the cast. Should the infection grow to be too serious, it may be necessary to remove the cast and apply a fracture box, sand bags, or extension.

The point I wish to emphasize is that many of these compound fractures when properly treated and not over treated will heal like a simple fracture. One of the great advantages in the plaster cast over the sand bag, and Buck's extension, is that the patient is able to get out of bed earlier. There are conditions, however, under which it is not practical to use the plaster cast, and some of the other splints must be used. Among these splints may be mentioned those described by Groves of Bristol, Eng., in the *British Journal of Surgery*, April, 1915.

DISCUSSION ON THE PAPER OF DR. WILLIS AND DR. NELSON.

Dr. J. L. Adams, Monroe: I do not wish to discuss Dr. Nelson's paper except for two reasons, primarily for the selection of his subject, and secondly for the able and exhaustive manner in which he has treated the subject. This subject seems to be a message to the country doctor, and a message fraught with much significance for the country doctor. It does not concern the man so much who is living in a city where there are good hospital facilities as it does the man practicing in a small town and remote country district where there are no hospital facilities. Too often in arranging our program we do so to suit the men who are best prepared to take care of an emergency and it does not touch the man who is really in trouble.

I would like to relate a case showing how the country practitioner gets into trouble or has a hard proposition to contend with. Fifteen miles from any point of medical relief two boys were out hunting. They were about fifteen years of age. The boys came in from their hunting shortly after dark. When they came in they began to scuffle, when one of the guns discharged its contents and blew off one of the boy's shoulders so that there was nothing left but large vessels and skin hanging below. The shoulder was almost disarticulated. They were fifteen miles from any physician or any medical aid whatever. A messenger was hurried three miles and telegraphed for a doctor to come at once, that a boy was badly hurt. A doctor with only an emergency bag such as is carried by all country physicians rushed out to that place, winding around bad roads in the night and inaccessible avenues, six hours having elapsed from the time the boy was shot.

You can imagine yourself in that doctor's position. That boy could not be rushed to a hospital where assistance, nurses, antiseptic dressings, etc., were in readiness. The country doctor had no assistance, no nurse, and above all found the boy in a dying condition. In such a case it is not a question of saving the limb for functional purposes, but of saving life, and he is going to die if something is not done for him promptly. The country doctor, equal to emergency, brought all the resources at his command in treating that boy, and today he is a big husky fellow.

That is the kind of proposition the country doctor is up against not infrequently. The country doctor has to know a little of everything, consequently he does not know much of anything, so he is excusable if he does not do exactly as his fellow practitioner would do who is connected with a hospital. The country doctor has very little to work with as compared with the city doctor, so I would sound a note of warning to the program committee and let us have a program in the future which is most suitable and interesting to the country doctor.

Dr. K. Winfield Ney, New Orleans: The doctor's paper is interesting because it deals with gun-shot wounds of the extremities. So far as shock being associated with excitement is concerned, I have not observed shock in this form. I know that it does take place, but in France, after the strain of battle, when the men were brought to the casualty clearing station badly wounded, there was very little or no excitement attending shock and everything was usually quiet. One characteristic about these wounded men was they wanted to sleep. You could hardly arouse them. Insofar as the treatment of shock and hemorrhage is concerned, it is important to immediately look to the control of hem-

orrhage by some means or other, and the next thing is to replace the volume of blood that is lost if necessary. This is best accomplished by salt solution with adrenalin chlorid added. Adrenalin chlorid is almost as important as normal salt solution. Another thing important is to elevate the foot of the bed or rather to lower the head in shock and hemorrhage in order to get blood to the vital centers.

With regard to using a thermometer to determine the time to operate, it would be more satisfactory to use a blood pressure apparatus. If one has a low blood pressure, there is shock or hemorrhage, or the two combined. The best thing to do is to take the blood pressure, and if that is good, it is safe to operate.

A common opinion has always been held that the fate of a wound depends upon the first dressing. We do not believe that is so. The fact that these wounds are not made with sterile instruments, even though a bullet may be less septic, and the further fact that it goes through tissues that are not clean and carries pieces of clothing, are important considerations. When these bullets penetrate the tissues there is always much devitalization of the tissue in its path, and the modern bullet has an explosive effect when it strikes a bone. The bone is broken into fragments which partake of the velocity of the missile, and they penetrate the tissues in all directions and they open up many channels; destroy blood vessels; and produce devitalized tissue all the way through. Such cases can be treated successfully only by making a free incision, establishing thorough drainage, and using a correct antiseptic technic.

Dr. Williams M. Perkins, New Orleans: I want to speak of the value of iodine in connection with gun-shot wounds. I have been using and depending upon iodine for a great many years in the treatment of wounds. I have had many battles with my brother practitioners over it, some of them claiming that iodine is not useful except when applied to the skin. My personal experience with iodine goes back to 1899 or 1900. The question has often been raised that no antiseptic will be of value in destroying bacteria which does not do damage to the tissues. However that may be, we know that a strong tincture of iodine is not very healthy for bacteria and you have no difficulty in taking a scalp wound to demonstrate it. If you mop out the wound with ordinary tincture of iodine, dry it with dry gauze, suture it, you will get union by first intention. What little damage may be done to the tissues by the iodine is not sufficient to prevent union by first intention. If it does not sufficiently prevent the actual life of bacteria, it certainly impairs their ability to reproduce their kind. They do not seem to flourish and colonies do not grow very well in the presence of iodine. This can be clearly and easily demonstrated.

We are told by some writers that in the particular forms of infection of ugly wounds reported from the European battle-fields where the soil is supercharged with malignant forms of bacteria, that iodine has proven to be a very useful agent, but they sometimes change from iodine to chlorin. Some of the reports regarding chlorin state that it is highly efficient as an antiseptic.

The Carrel technic, I understand, consists in making a very free incision rather than relying on mere choice of antiseptics.

Dr. E. Denegre Martin, New Orleans: I think the great trouble with most of us is that we are always on the lookout for an elaborate technic in connection with any operation, and that is especially true with the

experienced man. He looks for his experience from some medical journal. He reads an elaborate report of what some man is doing and he tries to report something new. In fact, we all try to report something new, but there is nothing new under the sun. We are always looking for the big things and neglecting the little ones.

We see in our office on an average ten wounds a day. We do surgical work for five railroad companies and I do not know how many other companies. When an employee presents himself with a wound of an arm or a leg, it is bathed with a solution of benzine and iodine. It is washed with it. If a man cannot stand this procedure we anesthetize him and wash the raw surfaces as well as the skin, and cover with iodine, and 90 per cent. of such wounds heal primarily. I have seen men with injuries in which the tendons were exposed, but that is nothing new. We are treating such cases daily, and that is what your practitioners in the country ought to do. If you want first aid, make every patient you treat in the country keep a bottle of iodine, one bottle for the horse, and one bottle for the child. I do not care what one says about the value of iodine in doing this or that, I know it is of great value, and the proof of the pudding is in the eating. I would suggest to the country doctors that they urge every patient in the country to buy a bottle of iodine, and whenever they are wounded, pour the iodine on the wound.

In the treatment of shock, if you have no infusion apparatus, start the Murphy drip right away. You are much safer with the Murphy drip than with salt infusion. Patients do not die immediately of hemorrhage from a small vessel; they bleed until there is not enough force behind the heart to make them bleed and the vessels become blocked. In such cases start in with your infusion or with the Murphy drip and you will soon be rewarded. Do not expect immediate action.

I was called to see the wife of a physician who had absolutely lost his head. She had a postpartum hemorrhage. Instead of having her feet up, he had her head up. She was given a quart of hot water by rectum and her pulse came back. It saved her life.

Another case I had was one of ruptured extrauterine pregnancy. The woman was almost pulseless; I could not touch her. I did not infuse that woman for it would have meant death. I did not operate on her; I let her alone. I resorted to the Murphy drip, and the next morning I could feel the pulse. I operated on her, made an incision rapidly, opened up the belly, caught the bleeding vessel, started infusion, and she is living, and is the mother of six children. The country doctor, let me tell you, has experience and judgment, and all he wants is iodine.

Dr. P. B. Salatch, New Orleans: As I understand, Dr. Carrel uses a continuous solution. If we use a weak solution of iodine proportionate to the salt solution, we would accomplish as good results, and iodine is more highly antiseptic than saline.

Another thing I have observed in connection with these cases of compound fracture, is that if you keep the patient in bed a long while the wounds will not heal, you cannot get union. There may be some interposition of tissue between the fragments. In making a fenestrated splint, if you take four pieces of heavy iron and bend them in this way (demonstration) and apply a cast above and below the wound, you can get a good splint and the patient can get out of bed and walk about assisted by crutches, and after a while there is stimulation of granulation tissues and bone formation, and whatever necrotic material you

have you can curet away. I remember having curetted one case twenty times before there was healing of the fracture.

That can be done in the country as well as in the city.

Dr. Joseph A. Danna, New Orleans: We hear so much about gas bacillus infection that the relation of a case may be interesting. This was a case in which I used the two stage principle and I think thereby saved the patient's life. I also used local anesthesia in the case which undoubtedly contributed to the saving of his life. This boy was shot by a lady next door, as he was entering the house of a friend. He was shot about two inches below the knee. He did very well for four days, then complained of pain. I examined him thoroughly and I could find no particular trouble. There was no swelling that I could make out, and the last time I looked at his leg was early in the forenoon of the fourth or fifth day after he was shot. The next day I did not see him until 4 o'clock. The nurse told me he had blisters on his instep and was complaining and was not looking so well. When I saw him he was in a very bad condition physically; his pulse was rather rapid; he looked dreadfully shocked. I looked at his leg and his foot showed signs of gangrene. I cut the dressing off and the limb was gangrenous up to a point just below the knee; there was a great deal of crepitation in the limb and the thigh above. Externally crepitation reached up to the crest of the ilium. I saw something must be done immediately. I made a circular incision in the lower third of the thigh, feeling the infection had not traveled so far as the gas had. Externally I removed a quadrilateral flap extending up about five inches farther than the rest of the limb; I made a circular cut right straight down, including the bone and sawed off the bone. After infiltrating the skin first, and then catching the nerves as I got to them, I infiltrated them, catching the vessels and so forth. In this case, I am sure if I had tried to finish the job, I would have done two things; I might have enclosed the infection, and the additional shock of trying to do a finished operation would probably have caused him to succumb at the time. I packed the open tissues with loose gauze and used a continuous eusol drip on him. After about two weeks I did the final stump trimming operation, and he is alive today to tell the tale.

Dr. Nelson (closing): I do not believe there is anything else I have to say except to thank these gentlemen for their free discussion.

I want to say in reference to the remarks of Dr. Salatich that I have used the splint of which he speaks twice in compound fractures and found it satisfactory. The plaster-of-Paris is applied so that it extends above and below the wound, including the ends of the splint as he says, and it is a splendid splint. After its application the patient can get out of bed.

I intentionally did not mention shock because I wanted to finish the reading of my paper. Shock has been discussed a great deal from time to time, and we do not know very much about it after all, so I intentionally did not mention it. I think as much of iodine as Dr. Perkins does. The reason I use iodoform gauze is that it prevents the development of bacteria about the wound.

NOTES ON THE TREATMENT OF BLACKWATER FEVER.*

By THOMAS E. WRIGHT, M. D., Monroe, La.

There is no phase of malaria that has been so generally discussed as the subject of this paper, and the chief features of the discussion appear to hinge about the question, "Shall we or shall we not administer quinin in this type of malaria."

Quoting some of the leading authorities: Mannaberg advises that quinin be used only in the presence of parasites demonstrable in the blood, and a history of previous quinin administration without any hemolytic action on the blood. Bastianelli concurs fully in the Mannaberg recommendation; this is also largely endorsed by Thayer and Vedy. Vedy says if it is impossible to make a microscopical examination of the blood, quinin should not be administered. Deaderick says, when the parasites persist after forty-eight hours following the onset, quinin should be administered; Deaderick also recommends its use in the intermittent type.

It will be noted from these that great stress is laid upon the use of the microscope to determine the presence of the parasites, which, when absent from the circulating blood, act as a bar to the use of quinin.

A careful study of the impression held by these and other malarial men leads us to believe that quinin is often responsible in some way for that group of symptoms termed blackwater fever. It might be classed as rank heresy for us to question seriously this attitude towards quinin. I acknowledge my heresy and frankly admit that I do question just how often quinin has ever produced hemoglobinuria except in rare cases of idiosyncrasy. I trust this feature of the paper will be taken up fully in the discussion.

It is also interesting to review that long list of drugs and measures used in the treatment of this disease.

Vincent strongly urges the use of calcium chlorid four to six grams daily, also some by needle.

Polli advocates his hyposulphite of soda.

Lewis uses, and very sensibly so, hypodermoclysis of normal salt which he believes acts favorably in the prevention of anuria.

Methylene blue is a kidney irritant and yet it once had its strong advocates; salicylic acid is extremely bad on the stomach, and yet it is often recommended.

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

Gallic acid, tannic acid, and ergot given on the basis that a hemorrhage is being dealt with, are considered ludicrous.

Quennec's chloroform theory as well as the advocates for ether are no longer considered seriously.

Hearsey recommends bicarbonate of soda and liquor hydrargyri perchlorid, which is quite similar to Sternberg's yellow fever treatment. However, the amount of alkali administered here is rather small.

Deaderick, in his excellent new text says, "Probably the most important indication in the treatment is the prevention of suppression."

It is too well known here to discuss at length that anuria may be produced by an acute poisoning of chemicals or drugs such as lead, phosphorus, and turpentine; also it is well known that certain toxins may produce anuria in that they lead so often to the development of acute Bright's. Osler mentions fevers and inflammations in the group of causes of anuria.

The causes of death from blackwater fever are chiefly three; suppression of urine heading the list, exhaustion, and cardiac paralysis.

In the group of symptoms of this particular disease we find one particular symptom which, if properly interpreted, might suggest to us the existence of a condition which in the main might become, and I believe does become, one chief source of danger to the patient. If this interpretation is correct we find an indication for a type of treatment that should receive careful consideration at our hands. Every doctor who has treated patients of this kind knows only too well the horrible retching and vomiting which obtain in nearly every case. I do not recall a single case I have seen wherein this was not true. This vomiting interferes seriously with the administration of food, water, and the medicine; and the weakness and prostration are at least considerably influenced by it. If we recall cases of very severe acidosis and compare this vomiting above outlined, together with the odor nearly always found on the breath, even in the absence of tests for acetone and diacetic acid, we are struck by the extreme similarity.

Might we not then administer a type of treatment only too well known by all present for acidosis, and note our results. Is it not more than probable that in blackwater fever we are dealing with an acid intoxication manifesting itself by vomiting, etc. It

is understood, of course, that the process going on in the blood that is responsible for the disease is simply that of hemolysis due to toxins for which the parasites of malaria are responsible. If such a suggestive treatment is administered with entirely satisfactory results so far as concern the vomiting, and our patient is able to take food, water, and drugs, with a general improvement in his condition, might it not be rational to conclude that this acid intoxication has been at least partly neutralized?

Inasmuch as anuria, as mentioned above, may be produced by a high concentration of toxins within the blood, is it not also rational to conclude that by this method some protecting influence has been thrown about the kidney and the chance of recovery increased.

Case 1. Mrs. W. entered the hospital October 1, 1915, with all the usual signs of blackwater fever. After two days of retching during which time very little water, food, or medicine was retained by mouth; her condition becoming critical. At this stage an active anti-acidosis treatment was begun with a subsidence of vomiting and a consequent general improvement which soon lead to recovery. She was given quinin only after the vomiting was under control and improvement was evident. This patient left the hospital October 8.

Case 2. Henry P. entered the hospital October 21, 1915, and developed blackwater fever within thirty minutes after being registered. An active treatment as above outlined was immediately instituted. This patient was in the hospital fourteen days, and his case was classed as extremely severe, yet he vomited only twice during his time in the hospital. One time was due to an indigestion, having been given a glass of sweet milk with a temperature about 103. The other vomiting time came after the administration of quinin. Patient left the hospital November 4, 1915.

Case 3. Frank M. entered the hospital October 25, 1915, two days after the onset. This plan of treatment was carried out and the vomiting ceased in about twelve hours. Patient left the hospital November 5, 1915.

Case 4. Frank McQ. was seen one hour after the onset, July 10, 1916. The same plan of treatment was carried out with very little nausea, vomiting three times. After the symptoms had abated and the patient's general condition was satisfactory, he developed a cholecystitis with a fatal termination on July 26, 1916.

Very good results can be obtained by the following method: Murphy drip of glucose and bicarbonate of soda solution, repeated every 3 to 5 hours. Bicarbonate of soda, in rather strong solution is administered by mouth, it becomes the patient's drinking water, acids are withheld, and sweets encouraged. Small enemas occasionally of soda and glucose solution with efforts to have them retained may be used in place of the Murphy drip in patients not in

a hospital. In very severe and prostrated cases glucose and soda 2% of each may be administered intravenously; the results will be more immediate and entirely satisfactory.

The effect of this type of treatment on the hemolytic process going on in the blood does not appear to be appreciable except insofar as a line of resistance against the toxins may be more quickly established by the maintenance of strength through our protection of the stomach and the kidneys.

I have not touched upon the usual indications such as proper elimination, careful sustaining diet, judicious hydrotherapy, the occasional use of oxygen, proper stimulation, etc. I take it for granted that these usual procedures will be carried out.

As to quinin administration, whether a blood examination is made or not, I am inclined to let the individual case, with circumstances as they develop, rather dictate the use of quinin. I give quinin in these intravenously, ten grains in 20c.c. of saline, once or twice a day covering a period of several days, but after the general condition of the patient relative to vomiting etc., is more satisfactory.

R. W. Burkett in the London *Lancet* of November 20, 1915, recommends the intravenous administration of 2% sodium bicarbonate salt solution, following this later with intravenous quinin. This is in line with that suggested by Leonard Rogers in the treatment of cholera. This was brought to my attention by the late Dr. von Ezdorf who had access to the hospital charts of the patients above mentioned. It will be noted that Cases 1, 2, and 3 were treated before the publication of Burkett's article.

DISCUSSION ON THE PAPER OF DR. WRIGHT.

Dr. Leon J. Menville, Houma: According to the latest medical history, a doctor from Monroe in 1856 was the first physician in the United States to report a case of blackwater fever, and 60 years later we sit here and listen to an admirable paper presented to us by Dr. Wright.

In discussing the treatment of blackwater fever, like the treatment of any other disease, it is especially necessary that the pathology of the condition be thoroughly understood. However, it is not within my province to discuss the pathology of blackwater fever but rather the treatment of the disease. Dr. Wright has thoroughly gone over the subject and I want to compliment him on his efficient work in that line. It might be of interest to the profession to know that Dr. Wright has given particular study to malaria for some years and that he is an authority on the subject.

In looking over the literature and studying personal experience I

find that treatment centers more particularly around the kidney, the treatment which will produce free elimination will be productive of the most good. The idea of Dr. Wright concerning acidosis is a very good one, and the intravenous injections of bicarbonate of soda are excellent. When the heart needs care in these cases, you will see at once the necessity for giving digitalis. Most of the authorities advise not to use quinin during the attack except that if the malarial parasite should predominate in such numbers that the symptoms in part can be attributed to it, then quinin may be given, but it is better to wait until the attack has subsided, and then begin with small fractional doses. A writer in the **Southern Medical Journal** has advocated the quininless treatment of blackwater fever. He lays stress on magnesium sulphate as a specific. Whether it is or not, I do not know, but for those who have a great many of these cases, perhaps it would be wise for them to look up the literature.

A writer in the **Archives of Internal Medicine** has especially warned the profession against using quinin in an attack of blackwater fever. After having heard Dr. Wright's paper and knowing the excellent results he has obtained and his great interest in the subject, I feel pretty safe in using quinin as he does in the treatment of blackwater fever.

Dr. Foster M. Johns, New Orleans: I have heard a great many discussions on blackwater fever, and in every discussion I can remember the chief bone of contention was, shall we give quinin, or shall we not? The pros and cons are equally divided, and both reporting as successful or not as successful results. The subject has been regarded from another point of view aside from quinin as being the basic fundamental feature. One person may say that he can cure all of his cases with quinin or without it. Certainly, some other plan of treatment besides quinin treatment should be tried out.

I wish to congratulate Dr. Wright on his successful reports.

Dr. J. T. Abshire, Le Røy: I want to cite a case of ancient history. I want to carry you back to the year 1895 when this same identical subject was brought before the Louisiana State Medical Society, and if you youngsters think you know it all, I will say that you are just as far from having a successful treatment now as they were then, and the subject at that time was discussed by Dr. John B. Elliott, Sr. The same identical reasoning I am hearing today I heard then, and it was the consensus of opinion then, and Dr. Elliott recommended it strongly, that the only treatment was turpentine, and the man who read the article at that time reported as good results from the use of turpentine as Dr. Wright has done with his treatment today, showing that in internal medicine we have not progressed in some lines as we ought to have done. We have not progressed as much as they have in surgery.

I have myself in the last twenty-eight years of practice used quinin in every case of blackwater fever, and we had plenty of it in my parish in years gone by. I used and followed Dr. Elliott's treatment with turpentine with excellent results always, but once I had a case of anuria. When I got there I used everything I thought of, and the patient died just like Dr. Wright's case. You cannot save some of them. I am very sorry that no perceptible improvement has been made in the treatment of blackwater fever.

Dr. I. I. Lemann, New Orleans: In view of the technic of Bass and Johns in growing plasmodium in vitro in the presence of glucose, Dr.

Wright's suggestion of giving glucose intravenously to malarial patients is interesting. One would suppose *a priori* that glucose solutions intravenously would be contraindicated in malarial infection since the plasmodia grow better in vitro in the presence of glucose. One would suppose that diabetic patients with hyperglycemia would prove easy victims of malaria. I have had the opportunity to see true diabetic patients infected with plasmodium, and I had the privilege of placing at Dr. Bass' disposal some three or four years ago such a case from whose blood Dr. Bass was able to grow the plasmodium without the addition of glucose. Such a patient might be expected to be the easy victim of malaria, and we might expect malaria to play havoc with diabetics. Such is not the case.

It would be interesting to know from Dr. Wright, since he has the temerity to give glucose intravenously to malarial patients, what the effect is upon the parasites. I would like to know when he does not give quinin to these patients whether he finds the parasites seem to grow more quickly and whether the malarial manifestations are more acute on account of the intravenous glucose injections.

Dr. E. S. Fulton, Iberia: In the summer of 1906, as an under-graduate I went over into the St. Francis River Bottoms in Ark., got as far from the rail road as possible and started in to practice medicine.

I had only been practicing about two weeks and thought I was getting along fine, when I was called to see a case of blackwater fever. I had been taught in Memphis to give quinin in all malarial conditions so I ordered several big doses for the victim, stating to the family that I would call the following day. Before I got back the patient had taken his departure to that 'undiscovered country.' About ten days later I saw another case of the same nature and I filled him full of quinin with the same result as before and the conclusion was forced on me that there was something wrong with my treatment. The next case I saw, I said to the family: "This man is very sick, you better send for a doctor." (Laughter) They sent across the woods for an old fellow who had been practicing medicine in that vicinity for forty years, and so far as practical medicine goes, he had more than some of us ever will have. He came in, looked the patient over; he didn't ask any questions; he knew by his appearance what ailed him. We walked out of the house into the yard and the old man lit his pipe, leaned up against the fence and looking over at me said: "Waal, Doctor, I has these cases of 'malayal heme-choria' and I gives 'em calomel in teaspoonful doses and I cure 'em." Said I: "Put it to him then for what I have been doing has been killing them." He took his calomel bottle out of his old saddle-worn bags and filled a teaspoon with the drug and rounded it off nicely making, I should judge, about one hundred and eighty grains, and gave it to the patient. The man got well. (Laughter). I had five other cases during my stay in that locality, I followed the old gentleman's line of treatment and they are all living today.

So I would suggest especially to those of you who have to treat these cases outside of a hospital and in cabins along the banks of the creeks, that if you left your intravenous apparatus at home, or you have no glucose or bicarbonate solution, before you let the victims of blackwater fever die, for Heaven's sake, give them a big dose of calomel.

Dr. Allan Eustis, New Orleans: I want to thank Dr. Wright for his

paper. It has been of distinct benefit to me, encouraging me, I might say, in my work.

I have been harping, as you all know, on the question of acidosis and intestinal toxemia for many years. I have not had a great deal of experience with blackwater fever. When I was in Vermilion we did not have a great deal of it. Why, I do not know, but it has died out. Whether it is in the diet, or the patients are taking more calomel and so many cases are not seen, I do not know. I have had one acute case in the hospital which was relieved along the lines that Dr. Wright has outlined. Realizing that the kidneys were the fundamental cause of his symptoms at that time, and the patient was comatose, had been passing bloody urine, and his kidneys were completely blocked, we simply followed out the use of glucose and the alkali treatment as we have been doing for a number of years. That man recovered. He was given quinin after his kidneys started up.

We have hematuria in other toximias, to which Dr. Wright has called our attention, and just because we have malaria there is no reason why the kidneys are going to kill the patient.

I have had one other case of blackwater fever (Dr. Philips' uncle) with a history of having had hematuria for a year. I treated him on a prophylactic basis, the liver measuring 16 centimeters, treating the acidosis prophylactically, and while he has had his malaria he has not had his hematuria.

Dr. A. A. Herold, Shreveport: When Professor John B. Elliott, Sr., lectured on hematuria he used to bring the evidence of those who favored quinin and those who were against it, and closed his lecture with the advice to ask the most successful practitioner in a community what he would do in a case of hematuria. So when I started out to practice I went to the oldest practitioners in this line and said, do you give quinin or not to cure hematuria in malaria? And the unanimous verdict was not to give quinin until at least 24 hours' after the subsidence of the symptoms. I followed that advice and the cases I have treated got well. These patients had been treated by purgatives before I saw them. The local physician would give them teaspoonful doses of calomel; the patients were thoroughly purged, followed by alkaline diuretics. Dr. Wright's paper is interesting and will prove instructive to us when we run across these important cases.

Dr. D. W. Kelly, Winnfield: Several years ago I was in a more malarial section of the country than I am now. I do not see the type of malaria now that I saw eight or nine years ago. With the type of malaria we see about the creek, I for one would take my chances in being treated by the fellow who uses calomel. I have had some experience with the severe types of malaria that we see in the woods, and I want to tell you right now that I believe in elimination. There is nothing better than normal salt solution, and you should eliminate every way you can. But, first of all, if I were to be treated, if I were to have a severe type of malarial hematuria, I would rather be treated by a practical man than to be treated in the best sanitarium by the most skilled man of any state in the country, because I believe that malarial hematuria is a disease we have got to learn a lot about. I have talked with Dr. John B. Elliott, Sr., and he seemed to take as much interest in asking me questions as I did in asking him. I certainly believe in elimination, and in cases of recurrent chills I always give quinin. When you

give quinin you want to give it intravenously or by the needle. When I was treating my cases of malarial hematuria, I treated them with Warburg's tincture.

Dr. J. L. Adams, Monroe: I do not feel that I can add anything to the able paper that has been presented by Dr. Wright. However, I feel it my duty to say something in connection with his paper in view of the fact that I have worked along with Dr. Wright and have been in close touch with his work. I congratulate him on his work along this line, and on this subject and especially the manner in which he has presented it; but, like Dr. Wright I am somewhat apologizing for the specific statements and position I took a year ago, and will probably apologize a little more later on relative to the intravenous use of quinin. Be that as it may, I have had some experience along that line of treating blackwater fever during the same course of time that Dr. Wright has treated it. Going on the theory that the capillaries about the congested portions contain practically all the plasmodia, the blood stream in common being free so far as we can determine during these attacks, I figure that by giving them intravenous infusions of saline plus five per cent. glucose we alter the blood pressure, change the line of circulation, and bring the plasmodia into the stream and the quinin would give the desired results. In that way relieving the pernicious vomiting and acidosis, by using glucose along with the alkali to stimulate the kidneys, we would obviate the suppression that usually followed. I would give the patient early in the forenoon a dose of calomel; I would give him an infusion of saline and glucose at the same time. About six hours later I would give quinin intravenously, repeating the dose as indicated, small doses, not over five or ten grains in 20 c.c. solution. I have obtained excellent results from that line of treatment.

Dr. G. C. Chandler, Shreveport: During the first year of my practice I had an unlucky number of cases of blackwater fever, that is, thirteen.

The objection to the use of quinin in this disease, is probably due to the enormous quantities that are used by some physicians. The condition of the patient from this disease, clinically, is very similar to yellow fever and we all know that the use of irritating medicines in yellow fever is very fatal and I think in all human probabilities, the enormous use of quinin in blackwater fever has created the objection to its use by so many first class doctors. When I was treating these cases as long as the kidneys acted freely I was never alarmed over a case no matter how much blood appeared in the urine for this blood is simply broken down blood cells which is a foreign substance in the blood and its elimination is beneficial. I believe the use of quinin in moderation in these cases, is good practice, of course it is absolutely essential to encourage the action of the kidneys because it is suppression that kills in most of these cases.

Dr. Wright (closing): I appreciate the liberal discussion of my paper. I must say, however, that some of the discussion has led into certain liberal expressions on the part of some of our good doctors relative to the use of turpentine and very large doses of calomel, that are not borne out by the best thought in modern medicine. These very large doses of calomel are both improper and dangerous. More than the average amount of calomel needed for proper elimination is at once unnecessary, and its use in such large doses as has been mentioned, I would class as bad practice. Elimination, of course, is necessary here

as well as in other conditions, but we should not lose sight of the pathology, as we see it in these cases, nor should we assign undue value to the gastro-intestinal tract especially with reference to elimination. Elimination can best be effected if vomiting is controlled, when small doses of calomel will give desirable results. We must not think that these enormous doses of calomel will by their very momentum "turn down the vomiting."

If the vomiting is controlled, water can be administered as well as food, the blood stream will be replenished, and the patient in a general way is sustained. If we do this, and allow the patient to build up his own line of resistance against the toxic element that is producing a dissolution of his red blood cells, I repeat, if we do this, we will have gone a long way towards his recovery.

I wish to refer in this discussion to the question of the administration of quinin. I maintain that entirely too much attention has been directed towards the question of whether or not quinin shall be administered. Patients recover while others die regardless of quinin administration. It is better not to lay down any set rules relative to the use of quinin in these cases. Its effect on the stomach in a case already vomiting is certainly bad enough to justify a question as to its use. The amount of good to be obtained from its administration is, I am inclined to think, questionable. The vast number of cases that are seen and treated by the general practitioner who has no facilities for blood examination, renders almost valueless the opinion of some of our best men relative to blood findings indicating the use of quinin. The idea prevalent among doctors as well as laymen that quinin will precipitate hemoglobinuria in some patients is without sufficient foundation to justify its discussion here. That a few individuals have an idiosyncrasy to quinin in this respect is true. We expect the average active doctor to meet not more than two or three patients of this type during his medical career. I maintain that this is an idiosyncrasy just as urticaria always appears with some patients after quinin by mouth, although the hemoglobinuric type is seldom seen. A dissolution of red cells produced by a sufficient concentration in the blood stream of toxic elements, as in malaria, certainly is not aggravated nor may it be precipitated by the administration of quinin.

Referring again to the use of quinin: Personally I am inclined to think at this time that after the stomach is sufficiently retentive for water and food and medicine that quinin may be administered without harm and with some possible benefit. In such cases I would recommend that it be given in ten grain doses intravenously, the doses to be repeated in six to twelve hour intervals until three or four doses have been given. Recurrences are less apt to follow the administration of quinin during an attack.

Again I wish to thank you for your liberal discussion.

THE USE OF NON-SPECIFIC PROTEIN IN OPHTHALMOLOGY.*

By T. J. DIMITRY, M. D., New Orleans.

Like many who have gone before and with the same desire to obtain an improvement in certain unfavorable eye conditions: i. e., corneal opacities, vitreous opacities, and other acute and chronic diseases of the eyes has stimulated the investigation of certain substances that may be beneficial in these and other conditions.

The study began with the use of serum obtained from the blood of the patient, and this serum was injected subconjunctivally. This had been suggested and was thought to possess certain beneficial effect. This Romer auto-serotherapy consists in raising a blister on the arm drawing off the serum and injecting it subconjunctivally. Good results are claimed in infected ulcers of the cornea, iridocyclitis, and infection following cataract extraction. Decot praises the use of phylacogen in the treatment of diseases of the eye and describes ten cases in which benefit was apparently obtained from this source. Alvarado praises antigenococci serotherapy in ophthalmology. Darier emphasizes the benefit of para-specific therapy and Ribas Valero describes the results obtained with the injection of antidiphtheric serum in ulcer of the cornea.

Continuing this investigation the writer used nucleic acid hyperdermatically, autogenous vaccin and the Schæfer's vaccin and through their use he obtained a certain beneficial effect, yet he could not note that this effect was greater than that obtained by the subconjunctival injection of dionin, filtered air, certain chemical solutions and the internal administration of thyroid extract, aspirin and certain internal glandular extracts.

Further investigation and search of the literature showed so many statements as to the want of a true specificity, and Matthes, as early as 1895, demonstrated that an albumose produced the same reaction as was obtained with tuberculin and explained the fever as produced by the broken protein. Rumpf treated typhoid fever with a vaccin of the *Bacillus pyocyaneus* and with results, but this was before any possibility of obtaining any approval of a non-specific method.

Of recent date the Schæfer vaccin was severely criticized without

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even a reasonable clinical investigation on the part of its critics. To quote Peterson & Joblin, "The very fact that it did do certain things at times should have led to a study of why such favorable changes were brought about." The fact that it was non-specific, however, was sufficient to warrant the stamp of disapproval by the medical profession. Van Wagner obtained results by treating paretics with tuberculin and Black reported early syphilis treated with tuberculin. Luke used a non-bacterial protein in typhoid fever and Schmidt used milk.

With these observations and a precedence before us, and that non-specificity was of importance in obtaining certain effect and with a study of the work of Vaughan and others was convincing enough to attempt the use of non-specific protein substances and note any favorable results.

The essayist has been using a non-specific protein substance, injected intramuscularly, for the last year and recites a few instances when he has obtained results. Muller and Thanner and also Weiss recite a number of clinicians who are using non-specific protein to influence acute and chronic infectious diseases, and they report excellent therapeutic results.

The treatment used is cow's milk which has been boiled for from five to ten minutes and, after cooling five c. c. are injected cautiously into the gluteal region. The injection was usually administered in this quantity and at an interval of four or five days. Much smaller injections were also used and at greater intervals. Injections were also made subconjunctivally. As many as six injections have been given and in two cases the injection was used twenty to thirty days after the first. There was a rise of temperature, usually not over 100° to 101° in most cases and in one case the fever ran to 103° , but in this case the result obtained was proportionally better than in those cases without a rise of temperature. The improvement noted was striking and it called for more careful investigation. You can imagine when it was first used, in spite of good effect obtained, that the use of this milk after the first injection met with opposition when the possibility of danger from anaphylaxis appearing so large on the horizon, and obstructive assistants added increased difficulties in carrying on the investigation. Probably it would have been abandoned had not just at that time an abstract appeared in the *Journal of A. M. A.* on "The Parenteral Injection of Albumin in Treatment of Eye affections,"

Muller and Thanner citing a number of clinicians who had reported excellent results from injections of non-specific protein in acute and chronic infectious diseases. Reports would be of great interest, for at the beginning the work was not carried on systematically, sometimes using large doses, 10 c. c., and at other times only a few drops. In six cases the milk was used subconjunctivally and jointly with the intramuscular injections. How much to use and how often needs investigation; also if the cow's milk that we used was always furnishing the same amount of protein? Was there a danger when other substances contained therein were considered? All this had a tendency to embarrass and will continue to embarrass until we have a careful and systematic compilation. The warning to be given is to make progress slowly. In my cases no by-effects were noted, but yet we must appreciate that there is a danger.

Its use in three cases of trachoma showed a remarkably good effect obtained. I might compare it to the effect of salvarsan in interstitial keratitis; it improves the uveal condition. In one case the eye cleared up perfectly, and in all cases there was an improvement. In acute gonorrheal conjunctivitis the improvement was marked and in interstitial keratitis the effect was quite a surprise. Not alone to recite the good effect obtained by myself, I refer you to Muller and Thanner, who cite a number of cases treated with milk and with good results. Friedlander made gluteal injection of milk in forty-two cases of trachoma all of the severe type. The effect was surprisingly good. He remarks that an epidemic of trachoma was stamped out by its use.

Without a doubt the non-specific proteins have a beneficial effect but most interesting is a study of its action and here is where we fear a prolonged discussion.

Note how slowly we have made headway in accepting any evidence of beneficial effect non-specifically, yet this slow progress is not to be criticised for fear the pendulum will swing too far in the opposite direction; thirty years in recognizing a demonstration on non-specificity is certainly not to be complimented. The non-specificity has been and is being scientifically investigated at this time and in this country by such authorities as Vaughan, Wheeler, Peterson, Joblin, Sybil and Davis. Certain clinical facts impress us with the belief that the specificity in the sense of Ehrlich may

be produced by a chemico-physical agent not necessarily specific. Bacteria are particulate protein substances and much as the protein of vegetable and animal life. Chemically they differ only in their secondary and tertiary groups. All proteins contain the same poison chemically, though this protein come from bacteria, vegetable or animal life. Non-disease producing bacteria possess the same protein poison as do the pathogenic bacteria.

This would lead me into a field where others possess greater information, but I can assure you, gentlemen, this study of non-specificity is a labyrinth most beautiful to travel through, and with immunization, infection and protein sensitization also involved.

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TREATMENT OF THE VOMITING OF PREGNANCY WITH OVARIAN EXTRACT AND CORPUS LUTEUM.*

By P. J. CARTER, M. D., New Orleans.

Without going into the chemistry, pathology, and physiology of this disease, I shall attempt to give only the treatment that has been most efficacious in my hands. We know that vomiting of pregnancy, and especially the pernicious type, is a most common complication of the parturient.

It is most unfortunate, that our present knowledge of the subject is so limited and involves so many questions. Seeing these poor unfortunate mothers, fighting with death from constant and long continued nausea, that leads to serious results from inanition, with the constant distress it occasions, impresses upon us the fact, that we have to contend with a serious and treacherous disease.

This condition may make its appearance during any stage of pregnancy. It may appear a few weeks after conception, and continue for a few days, or it may continue throughout the whole of pregnancy. It may make its first appearance during the latter

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half of pregnancy, or even during the last month. I have had occasion to treat two such cases recently.

One of our foremost writers, in dealing with this subject says,

“Functional diseases may be so transient as to cause only a temporary inconvenience, while others are so grave as to endanger the life of the patient. Very often the vomiting of pregnancy is due purely and solely to local causes in connection with the gravid uterus, be it a mechanical pressure, a displacement, or some morbid condition of the uterus. Then again we see those cases in which the cause is simplex, and we are unable to define it, though it may be said to be due, partly to pressure, partly to sympathetic irritation, or partly to nutritive changes produced by the pregnant uterus.”

Whether this disease has its initiation in the reflex, neurotic, or toxic variety, the treatment I shall outline is the same. On account of the lack of knowledge as to the causation of this disease, much study and countless remedies, and forms of treatment, have been suggested for its relief. Fisch, in 1884, reported a case of the severe form of vomiting of pregnancy cured by the use of thyroid extract. Seigmund reports a case cured by the evacuation of a densely packed colon.

To continue with the more modern forms of treatment, Pinard used eliminative measures, since he believed that intoxication was responsible for the tendency of pregnant women to vomit. Somers (*Western Medical Review*, November, 1910) treated his vomiting cases by the Ochsner treatment for appendicitis. Martin, of London, used gastric lavage, together with dieting and elimination.

The very latest method of treatment before the use of ovarian extract and corpus luteum was that of Fieux and Dantin. They used the serum of healthy pregnant women who were at the same stage of pregnancy as the affected ones, giving it intramuscularly into the buttocks in varying quantities, depending upon the gravity of the case. Their reports have been very encouraging.

I began my experiments in the treatment of nausea of pregnancy in October, 1915. It was through the co-operation and kindness of Parke-Davis & Co., and Lilly & Co., in supplying me with enough ovarian extract and corpus luteum to carry out my experiments. I had never heard of ovarian extract being used to control the vomiting of pregnancy, therefore I began on a purely experimental basis. At the Lying-In Hospital of New York, where I had the pleasure of serving as house surgeon during a term of

1913-14, I saw and treated quite a number of these cases. At that time we only knew of and practiced the eliminative measures to control the vomiting, just as we did in our eclamptic cases. Our results were not very encouraging.

Since October, 1915, I have had twenty consecutive cases. I report these on account of the phenomenal success obtained. Every case responded satisfactorily, and without a single failure, though in a few cases I found it necessary to increase the dosage. The duration of vomiting after beginning the treatment, averaged from one day to two weeks; the general average being ten days.

To give an idea as to the varying quantity of the drug and the duration of vomiting after medication, the following case reports are given.

Case 1. Mrs. H., age 22, para II. In her first pregnancy had severe nausea and vomiting. At that time she was six weeks pregnant. Abortion performed. A second pregnancy followed three months later with the same distressing symptoms. Twelve doses of ovarian extract, five grains each, were given three times a day, at the end of which time the condition was relieved entirely. At her fourth month, she began to vomit again. The same treatment was again given, after which she went to full term and delivered without any recurrence of the nausea.

Case 2. Mrs. S., age 23, para I. Was seen by me in her second month. Simple nausea every morning but very distressing. This had continued two weeks before I saw her. Six tablets of ovarian extract were given, though three controlled the nausea completely. She is now eight months pregnant, and has not had the least discomfort since her first medication.

Case III. Mrs. F., para IV. Three and one-half months pregnant, former pregnancies normal, no nausea. Vomiting began at six weeks, and had continued daily since. Vomited several times a day, irrespective of meals. She was extremely emaciated, countenance pale, skin cold and clammy. Temperature 100°, pulse 116. She was given eleven tablets of ovarian extract, five grains each, over a period of thirty-six hours, at the end of which time her vomiting was completely checked. Fortunately she did not vomit the medication.

Case 4. Mrs. F., age 25, para II. No nausea or vomiting with her first pregnancy. When first seen was five months pregnant. Extremely emaciated, cold and clammy skin. Temperature 101, pulse 120. Loss of weight in past two months had exceeded 20 pounds, and her vomiting had continued since the second month. The drain upon the body had been so severe, that she was in a delirious state most of the time. Stomach rejected everything. Glucose, 5 per cent solution was at once started. Twelve doses of corpus luteum by needle was given over a period of 24 hours, making the injections every two hours. At the end of this time she was a great deal better, and could retain ovarian extract by mouth. For several days ovarian extract was given three times a day. After the twelfth injection of corpus luteum, she was able to

retain liquids by mouth. In two weeks she was on a solid diet, and there was complete abeyance of all nausea and vomiting.

I do not contend that ovarian extract or corpus luteum will cure every case of vomiting of pregnancy, but it will largely control those of the toxic type. My experience with Copeman's method and the bimanual replacement of a displacement, have not been very encouraging. I have attempted to correct many of these displacements, to find relief only by the administration of ovarian extract.

With my limited experience with these drugs, I give the ovarian extract alone where there is not incessant vomiting, and the patient's stomach will tolerate it. The ovarian extract seems to give the quickest relief, and the patient is not annoyed by the repeated use of the hypodermic needle. In cases of a more serious type, in which the patient vomits everything, then we rely upon our corpus luteum by needle. For the reason that patients object to the needle, and the lengthened time (in my experience), to get results with the corpus luteum, I begin my ovarian extract as soon as the stomach will tolerate it. Corpus luteum has been a life saver in those grave cases, in which vomiting was incessant, and should be administered as long as the patient is in such a perilous state.

The literature upon these two drugs in the treatment of vomiting of pregnancy is extremely scarce, so much so that barely half a dozen papers have been devoted to the subject. John C. Hirst, (*Jour. A. M. A.*, Vol. LXVI, No. 9) gives a preliminary report of five cases with 80 per cent success. In these cases he administered corpus luteum only and by needle. Later on he was able to add a few more cases to his experiments, which increased his percentage to 84 per cent. The smallest dose used in this series of cases numbered four; the largest forty-two, the average dose was eleven.

From these statistics we should be convinced of the virtue of these drugs. With a record of 84 per cent success, plus a record of twenty consecutive cases treated successfully, should cause every obstetrician to give this treatment a thorough investigation as to its therapeutic value.

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DISCUSSION ON THE PAPER OF DR. CARTER.

Dr. E. L. King, New Orleans: In discussing the question of vomiting of pregnancy we should first take into consideration the various types of this order, and we find it best to divide the cases into reflex, neurotic and true toxemic classes, depending upon the underlying cause. The reflex type is most often caused by a retrodisplaced gravid uterus, an ovarian tumor, adhesions, or a similar local condition. The neurotic type, as Williams especially brings out, is found most often in the higher class of women, especially in America and France. The true toxemic type is of more infrequent occurrence.

Williams states that vomiting of pregnancy of some form or other occurs in about one-third of pregnant women, and DeLee brings out the point that true pernicious vomiting occurs in the proportion of about one in every thousand cases. So the great majority of cases we have to treat will be of the reflex or the neurotic type. The reflex type, as mentioned by Williams, is often cured by simply treating the underlying cause, e. g., replacing a retroposed gravid uterus or removing an ovarian tumor. We must always bear in mind that vomiting **during** pregnancy is not necessarily the vomiting of pregnancy. There is a case reported by an Italian author, in which abortion was induced on account of vomiting; death ensued, an autopsy disclosed the fact that she had cancer of the stomach; this had caused the vomiting, and hence the abortion was unnecessary.

As regards the cause of this complaint, we are still in the dark. There is practically always some underlying toxemia, except in the true reflex cases. But we should always bear in mind that vomiting in the last two or three months of pregnancy may be due to eclampsia or to some renal condition.

To differentiate between true pernicious vomiting and the milder types is sometimes difficult and often impossible. Williams lays stress upon the urinary examination, especially the estimation of the percentage of ammonia in the total nitrogen elimination. This is a rather difficult procedure and is suitable only for the laboratory and not for the general practitioner. He states that any case that shows an ammonia percentage of 20 or over should be considered toxemic and aborted at once. On the other hand, in his opinion, any case showing a percentage below 20 may be toxemic, but is more probably neurotic; in the latter event, the patient can be cured by rest in bed and suggestive treatment. If these measures fail, abortion may be necessary.

The prognosis of the milder types is good; the severer forms of the neurotic variety present a higher mortality, and the true toxemic variety present a higher mortality, and the true toxemic variety a still higher percentage. Thus, in one hundred and eighteen cases collected by DeLee, there were 46 deaths (these were true pernicious cases.)

The treatment advocated by Dr. Carter and employed by Hirst has changed things quite a bit. Why was this first thought of? I do not know why Dr. Carter started using it, but Hirst gives his reason thus:

"Every woman, during the period of sexual activity, is constantly absorbing corpus luteum. No sooner is the corpus luteum of one menstruation disposed of, than another appears to take its place. With the onset of pregnancy, this absorption ceases. The corpus luteum of pregnancy constantly increases in size, until it reaches its acme about the third month. From this time on, it is gradually absorbed. The nausea

of pregnancy, beginning during the period of non-absorption, disappears about the time that the corpus luteum begins to decrease in size. Is it not reasonable to assume that this is not coincidence, but cause and effect, and that the corpus luteum plays an important part in relation to the nausea?"

With this thought in mind, he began using it, and his results have been very good. In his last report he relates the results in thirty-six cases that he has treated, with thirty-two successes. Of the failures, one was reflex and was cured by replacing a retroverted uterus. Another case was probably neurotic; this patient had a large goiter and it was thought that this might have been a factor in the case. Two failures are unexplained. That leaves thirty-two cases out of thirty-six, and of these he mentions that two were of the true pernicious type. The others were the ordinary cases of vomiting of pregnancy which we see, which are extremely annoying, and which may become pernicious if neglected. One of these cures, he notes, was probably due to suggestion, as she received but four injections. Judging from Dr. Carter's report, he has had a higher per centage of the true pernicious type, and thus his results are more valuable.

Another point about this treatment with corpus luteum is this: that the manufacturers tell us that it is not necessary to insist that the extract be made from pregnant animals. Parke, Davis & Co. state that, taking the animals as they come, about 90 per cent by weight of the corpus luteum is from the ovaries of pregnant animals. That is due to the fact that something over 60 per cent of the animals slaughtered will show pregnancy, and, of course, the corpus luteum of these will weigh two or three or a dozen times as much as that of the non-pregnant ones.

Besides Dr. Carter, others in New Orleans have used this treatment with success. Dr. Miller has used it in several cases, and is quite enthusiastic about it. The late Dr. Lanaux also used it quite extensively. At the Charity Hospital, in our obstetrical service, it has been used in a good many cases, and we have had practically uniform success with it. I think that, considering the experiences of Dr. Carter and of Dr. Hirst, it can be recommended as a treatment that will give better results than any other treatment so far advanced in the ordinary vomiting of pregnancy, and even in the true pernicious type.

Dr. P. B. Salatich, New Orleans: It is wrong to let this important subject go by without more discussion. We have had some experience on both sides in these cases. The interesting part is how and why the corpus luteum acts. Many women go on and have two or three children and are perfectly all right, only vomiting a few times. They may vomit in the morning, and then they may have a third or fourth child, with pernicious vomiting. The question comes up in my mind, if it is due to a lack of ovarian secretion, why should not these women, that have had no trouble previously, have trouble probably with the fourth child, and why should they have trouble with the first child and not have trouble with others? I remember a case of a woman who is now pregnant two or three months. Eight months ago I had quite a time trying to save her life. She was almost moribund. I was afraid to take the responsibility myself, and called in an elder practitioner, and the first time he examined the woman she was almost pulseless, and the doctor ordered that something be done to the uterus or the patient would die in two hours. I had tried different means of treatment of this woman, and, simply by puncturing the membranes and letting out the fluid, the patient

was immediately relieved. One could not attribute that to a lack of ovarian extract. If it was due to that, simply by puncturing the membranes and relieving the pressure would not have immediately relieved this patient. In many cases you find, by simply letting the waters out, the patient will experience immediate relief, or simply by puncturing the membranes she will immediately stop vomiting. In many of these cases, if you examine the cervix, you will find it is markedly ulcerated, and probably by making a few applications of iodine to the cervix the vomiting stops. Then, again, you find that many of these cases are of neurotic origin. I think more than 75 per cent of them are of neurotic origin, and, whether the ovarian extract acts by its influence as an analgesic, we know it acts not only on the ovary itself by supplying secretion that is probably diminished, but it quiets nervousness and relieves headache. Is there a lack of secretion? If there is, why should not every woman have it, or has it analgesic properties, or is it psychopathic? You take many of these cases, and I have found, by giving them large doses of bromide and chloral per rectum, first giving them preliminary treatment with calomel, starting with one-sixth of a grain and given every hour for twenty-four hours, the vomiting will stop. Then I give them a purgative. After that I give them doses of bromide and chloral, and in many of them the vomiting stops. I spoke to Dr. Carter and asked him if he had any idea how he thought the corpus luteum acted and on what physiological lines? He did not take that phase of the subject up, but I told him it was interesting to me to know how it acted—why it should act in one case, and why a woman should have trouble in one pregnancy and not have it in the next.

Dr. S. M. D. Clark, New Orleans: This paper presented by Dr. Carter is a splendid one to bring before us, and, as Dr. King said, we have been tinkering with it and trying to work it out since Dr. Hirst came forth. Before it came on the horizon I thought I was beginning to work out a scheme that had some virtue, in that it gave such universally good results, and that treatment consisted in this: One of the fundamentals, of course, is that there are various types, but one of the fundamentals is to go down to the basic side of it, to get the patient away from the family if you can. In some of these cases of vomiting of pregnancy there is a neurotic side, and it is well to get the patient out of that environment and put her in a different one if you can; get a good, sensible nurse who will carry out your instructions right, discipline them properly without any lack of humanity. If you can get these women to go to an institution, so much the better. I have discovered acetone and diacetic acid in a goodly number of these cases. Therefore, putting these patients on a drip of glucose and bicarbonate of soda, say a pint, containing fifty grains of sodium bromide, and filling them with fluids, will help to correct the acidosis and the glucose will play its part in the carbohydrate changes. The other thing I usually do is to give small doses of milk of magnesia by mouth for the acidosis. In ten to twenty cases I can recall in the last eighteen months, that treatment has been followed by gratifying results. We have tried everything we could, and nothing seems to be of value except to empty the uterus. I would simply make a plea for a little opportunity to try this out, and, so far, it has been one of the most gratifying things to send such women home in a week, eating what they want. When the corpus luteum extract came on the field I tried it in conjunction with this, so I am not prepared to

say just how efficient it is and how much one depended on the other, but I think Dr. Carter has brought a real live thing before us, and a thing that is available to us all, and we ought to try it out and let the jury make its final report in two or three years, and we will know whether we have got something good and permanent or not.

Dr. O. W. Cosby, Monroe: About seven years ago I read a paper before this body at New Orleans on this subject. I took as my viewpoint, "all the ills peculiar to pregnancy, from the simple morning sickness to pernicious vomiting, eclampsia and acute yellow atrophy of the liver, were due to one and the same condition, namely: sub-oxidation (excluding, of course, the nervous type), and that the only difference was a variation in degree or intensity." I recommended the treatment outlined by Dr. Carter, only I used thyroid instead of corpus luteum. It gives me great satisfaction to know that this idea is now being taught in our best medical schools (or some of them), and I now believe exactly the same, only that I think I would use corpus luteum instead of desiccated thyroid. This, together with hygienic, dietetic and antacid measures, elimination and the prohibition of all proteins, seem to me to be all there is known on the subject.

Dr. E. Denegre Martin, New Orleans: To me, no explanation has been offered that is quite clear why we are using a drug which is giving results, and the reason the explanation is not clear is simply this: every one of us has had experience with these cases. The last experience I had was about six months ago, when a patient was brought to me from the country who had been vomiting persistently for weeks. She was in an emaciated condition, and was brought for the purpose of having an abortion done. She reached the Touro about 9 o'clock at night. I saw her, and, as she was comfortable, did nothing that night. As she did not vomit for several hours, I concluded to wait until the next spell of vomiting. She never did vomit again. I kept her there a week and she went on to term.

I was called to see another case on one occasion, and the woman was in such bad shape that I concluded to perform an abortion. I thought I would dilate the cervix and let it go at that. I dilated the cervix, she stopped vomiting, and was delivered at term. How are you going to explain it? Possibly it is a reflex condition that brings it about, but what causes it?

I would like to hear, at the next meeting of the Society, how corpus luteum affects this condition, and when we get this information we will have the key to the situation.

Dr. George Dempsey, New Orleans: There is a temptation to-day to adapt all remedies to the particular cases. Vaccins and extracts and substances of that kind are being used to such an extent that the medical profession ought to be very cautious. Formerly, pharmaceutical preparations were handled like most of these preparations to-day. They were put through a test from a pharmaceutical standpoint. The United States Pharmacopeia, before adopting a preparation, required a period of ten years' trial before it was put before the medical profession and used. To-day it is the contrary. Any detail man of any consequence or any manufacturing house having a preparation which they think valuable is apt to put it in front of the physician and start him to using it.

The question of vomiting of pregnancy is one that has agitated the profession for twenty or thirty years. I remember some years ago

hearing Dr. Czarnowski, who was considered at that time one of the best obstetricians we had in the City of New Orleans, make the argument that he never allowed a nurse to wash his babies; that he washed the babies himself. He was a druggist, and used every means in the drug store to control the vomiting of pregnancy. Once upon a time the Society had a meeting and Dr. Czarnowski spoke on the vomiting of pregnancy. The hall was almost filled that night. He said he had tried everything under the sun, but by simply putting the patient in the knee-chest position it controlled vomiting. So I will say, with a great deal of respect for Dr. Czarnowski, that I have tried everything under the sun, but by changing the position of the fetus you will get exceptionally good results. Get the patient to turn over in bed, or get her in the knee-chest position for five minutes while you are waiting for further experience with the extracts, and you will find your results will be very gratifying.

Dr. J. T. Abshire, LeRoy: As country practitioners, we have a good deal to do with the vomiting of pregnancy. We have women in the country who have hyperemesis gravidarum as well as you have women with it in the city. Thus far only city doctors have spoken about this matter. I want, as a country doctor who has had experience, to say a few words on the subject, and I am somewhat like Dr. Martin. I had a case that got better after eating popcorn—not prescribed by me, however.

Dr. Clark has said that one of the fundamentals was something which he explained to you. There is another fundamental, and that is the confidence of your patient in hand. If you have not, I am satisfied that neither the corpus luteum nor ovarian extract will stop the vomiting, because I consider these cases almost all neurotic in origin. If you have not the confidence of the patient, let her get another doctor in whom she has confidence. I have stopped the vomiting of pregnancy in a hundred different ways, and became quite enthusiastic over each treatment, only to drop it later on. I have painted the cervix uteri with 10 per cent nitrate of silver and have had remarkable results in these cases. I have likewise done what Dr. Dempsey has done; I have done all kinds of things, and they have always gotten better, so far. I have not lost any of these women, but I did see one die in the practice of one of my confrères. She died quickly.

I am glad Dr. Carter brought this subject up and has given us another weapon in our armamentarium to fight this terrible trouble, but I am very much afraid we will have to give him three years to report back on it. I believe in less than three years he will make a report that is not quite so good. Hyperemesis gravidarum existed long before Hippocrates, and will exist long, long after we are all dead and buried.

Dr. Thomas E. Wright, Monroe: I believe that most of us appreciate the fact that we have in the human body a kind of equilibrium as to growth and development and maintenance of health, etc., that is regulated by the internal secretions. I think the paper just read is timely; it has merit in it, and the author gives us an index to the work he has done which will be of considerable benefit to the profession. Without a doubt there are certain types of vomiting in pregnancy that are due to a loss of this equilibrium with reference to the internal secretion maintained by the ovary. No doubt but that the usual nausea and early morning vomiting in the beginning of pregnancy, even when not severe, is a manifestation of this loss of equilibrium, in a small way. Inasmuch

as the reproductive organs are experiencing very rapid and marked changes, and inasmuch as the ovary, with its secretion, presides over, to a great extent, this reproductive apparatus, might we not conclude that, in the beginning of nearly all pregnancies, the demand upon the ovary for a greater supply of its secretion to maintain an equilibrium is greater than the ovary at once can supply? If this is a tenable thought, might we not suggest ovarian extract as a general measure in every case of pregnancy where nausea or vomiting obtain, even in a small way?

I am inclined to be rather enthusiastic about this subject, and I trust that future developments will substantiate every claim made by the author.

Dr. F. V. Gremillion, Alexandria: I would like to relate briefly some experience I have had along this line, not with ovarian extract, but with pituitary extract. The first case was a VI-para. She began to vomit about the fifth week of pregnancy. I had confined her in five labors before, and she only had slight vomiting during the first five pregnancies. I used all the regular remedies—oxalate of cerium, cocain, and everything we all use. I put her in the knee-chest position, and finally the husband came to the office and said: "Doctor, you confined my wife before and she cannot stand this; we will have to do something else." I said to him: "Let us get another doctor and see what he says about the case." So we studied a great deal before putting anything into the uterus and we decided to give a dose or two of pituitrin. We did so, and the next morning she was better. We gave her another dose that night, and we kept that up for eight days, and, as she was so much better, we discharged the nurse. The nurse went home, stayed about two weeks, and the woman began vomiting again. We sent for a nurse, put the patient on pituitrin, and she soon stopped vomiting, and was subsequently confined with a healthy child.

The next case was VIII-para. I confined this woman twice before. Five years before I confined her she had twins, two years before she had a boy, and she had been a hearty woman all her life; she had been in good health; she had a small fibroid, but never had any serious time before. I tried pituitrin; I tried local applications, like Dr. Martin said, and before I put her on pituitary extract, which I gave her twice a day, she took ten doses, repeated at intervals, and got perfectly well.

A third case I had was a III-para. She had not been confined as yet. She had been pregnant five weeks. She gave a history of vomiting during her first pregnancy. These people moved to Alexandria about a year ago, and the woman was confined by some other doctor in her first two confinements. I tried the ordinary remedies, and finally she began to have a slight uterine contraction. She had a mucous discharge, which was slightly tinged with blood. I examined her, made an application, and gave a dose of pituitrin by needle, and in thirty minutes the bleeding stopped, and she is all right. You can give pituitrin by needle when they cannot retain anything else. There is a correlation between the internal secretion of the ovaries, thyroid, the pituitary and suprarenal, and that is the way I understand it.

I remember some years ago of having had such a case as that reported by the doctor. We had performed an abortion on her some years back. She was taken to the Presbyterian Hospital. I believe one great advantage in the use of these products is that you can give them

hypodermically, and the time will come when we will find, as the doctor says, extreme anxiety and worry from confinement on account of the disturbed internal secretions.

Dr. Carter (closing): I wish to thank the members of the Society for their free discussion of this paper. Of course, I have had cases in which I have not been able to control the vomiting. I have had cases in which I gave a little of the cerium oxalate and bismuth sub-nitrate. In a series of sixty consecutive cases, I will defy any man to get up and say that this treatment is no good.

In regard to the use of popcorn, that is all right, as well as the other remedies that have been mentioned here, if the stomach is able to stand it. But let us suppose a patient is vomiting incessantly and cannot retain anything; what are you going to do? You are going to get results by the administration of ovarian extract, or, rather, corpus luteum, by the needle.

Dr. Edwards: What is the dose of corpus luteum?

Dr. Carter: One c. c. in ampoule. I have not had a chance to use ovarian extract in ampoules; I have some now, that has come about a week ago, that I intend to use in my cases of excessive vomiting, where I have used heretofore corpus luteum. I have had better results with the ovarian extract than with corpus luteum.

In regard to how and why this treatment acts. I used it from a purely neurotic standpoint in cases of hysterectomy. In a few cases I have used it in women who have undergone a severe nervous strain following complete hysterectomy, and the ovarian extract relieved them. I have not had encouraging reports from corpus luteum that I have used, but ovarian extract does relieve the nervousness of these women. If this vomiting of pregnancy is a neurotic condition, the ovarian extract should have some effect, and I began using the ovarian extract upon this assumption.

I appreciate Dr. Clark's very ample discussion. I have had five cases of the pernicious type of vomiting, with temperature and with a high pulse rate, accompanied with an extreme degree of hyperemia. I started these cases with 5 per cent glucose solution to get fluid in the body. I have never used bromid or chloral, as I have been afraid to do so. I have given two ampoules of corpus luteum every twenty-four hours. I have given fifteen grains of ovarian extract by mouth for twenty-one days without any bad symptoms. I wish every man here would try this and test it out as to its merits.

**COMPOUND FRACTURES—A PLEA FOR EARLY
PERMANENT FIXATION.***

By WM. M. PERKINS, M. D., New Orleans.

The object of this paper is not to burden this meeting with case histories nor resumes of the best recent text books, but to summarize for consideration some problems presented by compound fractures, and especially to emphasize the advisability of early fixation.

Some fractures not compound call for early operation but will not be discussed here, as it is hoped to concentrate attention and discussion exclusively on compound fractures. In these, the primary risk of infection has already been incurred, and we cannot urge the objection that the skin should be left intact to exclude bacteria.

Personal observations and experiments are the basis of the paper.

There was formerly a marked disposition, in treating compound fractures, to delay the final bone work until all soft tissue infection was under control, and especially if the case came to the surgeon several days after injury. Some of the most recent articles still suggest a late date for the final bone fixation. Much loss of time and multiple operations, with their attendant dangers, are unavoidable results.

Aside from removing all debris, including dirt, clothing, useless bone fragments and hopeless soft tissues, the most important problems in compound fractures, aside from the bone repair itself, may be readily grouped under hemostasis, infection, soft tissue repair, drainage, dressing, splints, and pain.

The most efficient solution of each one of these problems is made more easy and sure by the early fixation of the bones in what we hope to be their permanent position. Ample incisions are necessary to secure complete hemostasis and to thoroughly inspect any exposed blood vessels which may, at some later time, slough and cause hemorrhage. The thorough cleansing of the wound to minimize infection and accurate repair of such muscles, tendons, ligaments or nerves as may be improved by sutures, all necessitate free incision. This affords facilities for satisfactory bone fixation through operative wounds already made and obviates the destructively superfluous incisions which would be made to finally arrange the bone fragments if the old plan of delaying the bone work were

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followed. Furthermore, it is much easier to properly align bones immediately after injury than to do the same work when masses of scar tissue not only necessitate new incisions, but also demand much larger incisions because of the unyielding condition of soft tissues matted together with scar. Procedures are often rendered impossible by the presence of large masses of unyielding connective tissue which will not permit the proper alignment of fractures without excising impracticable amounts of scar tissue. The approximation of the fractured ends may be easy and satisfactory through large incisions in normal and yielding soft tissue, and may become formidable or impossible if weeks are allowed for the accumulation of connective tissue masses. Besides this, our knowledge of normal anatomy helps much in operations on normal tissues, but becomes of much less use when cicatricial formation has pulled or pushed important structures from their normal lines and planes. Then too, under the head of hemostasis we must remember the danger of damage to vessels from bone fragments which are not completely mobilized and which change their position when a limb is handled during a dressing, or even from muscular action, while a limb is apparently resting quietly in a splint.

The fight against infection may be prolonged for weeks. Even with the astonishing results recently shown by Carrel, an ugly compound fracture may require at least three weeks before it is sufficiently aseptic for the ideal delayed bone fixation work. Three weeks would in many cases be long enough for some efficient callous formation if the bones were properly aligned. On the other hand, if the final fixation be delayed the initial repair effort of the bone marrow, in place of being utilized to join together properly aligned fragments, may be wasted in the formation of new growth about the ends of bones not brought together, which new growth has to be ruthlessly cut away when the fracture is finally attended to. It is well to remember that the body repair forces and supplies, though prodigal, are not inexhaustible. It is a matter of common observation that bone repair is quicker, surer and firmer when it takes place immediately after the injury than if it can only be utilized at a time when the first callus must be cut away to secure proper apposition. The second rally of the bone repair forces is not as efficient as the first. The point to be emphasized here is that the time utilized in treating a bad infection through any open incisions can also seriously forego for the first and most important

steps of the bone repair. The question of adding to the danger of infection by operative procedure upon the bone itself will be considered with the question of the selection of the bone fixation procedure because the selection of the procedure in compound fracture work must be largely based upon relative danger of infection.

The repair of the soft tissues must be more satisfactory if planned in connection with the bone restored to its normal position and alignment or at least in what is going to be its final position. Where the fracture permits of over-riding, muscles will inevitably shorten scar tissue to an extent sometimes astonishing, and scar tissue often makes this shortening permanent. Practically good bone is sometimes sacrificed and a limb permanently deformed thereby, simply because at the time of the delayed bone operation it is found impossible to secure sufficient mobility to replace over-riding bone fragments. Further, callous union often occurs between badly placed fragments, and must be cut away at the delayed operation with increased trauma and hemorrhage, and exasperating waste of practically good bone tissue which might just as well have been utilized in the repair work, if the bones had only been placed and held in proper position early. Proper provision for drainage and adequate openings through which to dress the wound often would require additional incisions. These additional incisions are sometimes necessary for drainage and dressing purposes in early operations. They are much more often necessary when the operation is delayed.

It is well to theorize about delaying the bone operation until perfect asepsis has been secured and the operator may work in sterile tissues. When such conditions can be advantageously secured, do it. But in many cases this ideal sterile condition will only be reached after many months; in fact, a delay of many months has been advocated for the bone repair of compound fracture by some of our prominent surgeons. The acid test is this. "What would you want done to your own leg if you had a compound fracture?" The patient's loss of time must be considered, provided we do not sacrifice safety to time.

The question of splinting a compound fracture is usually troublesome, but if the bones be not fixed splints must be more elaborate, bandages must be more voluminous and tight. The bandages and splints must prevent the disposition of muscles to displace the fragments, extension must be sufficiently active to prevent shortening

and the damage which might result from the pressure on vessels or other soft tissue by unrestrained bone fragments.

Pain is sometimes a prominent factor. The fundamental law in treating fracture pains, is immobilization. Therefore immobilize early.

In selecting the type of operation for early bone fixation, the effort to minimize infection should be always in mind; therefore complicated operative procedures are less valuable than simple ones. Lane plates are at times so very valuable as to be practically indispensable, but they are open to the one big objection that they are somewhat dangerous in the presence of infection. The use of large Lane plates requiring three screws on each side of a fracture involves relatively large operative wounds in the surrounding tissues and opens up large areas to the infective process. Even where short plates with only two or three screws are used, the screw wound in the bone is badly adapted to drainage if infected, and the plate itself inhibits drainage. The plate method is therefore not especially adapted for early operations in the presence of probable infection.

Simple wire and the simple band method devised by Drs. Parham & Martin are much more useful for the class of cases we are considering. The band method is especially adapted to the oblique fracture and the simple wire to the fracture which is practically transverse. The wire has the additional advantage of being more clearly applicable to any kind of fracture, and therefore more generally useful for the surgeon's emergency outfit than any other one thing which has been devised.

The main objection to the early use of the wire has been an additional danger to infection caused by the hole drilled in the bone ends. Practical experience has convinced the writer that this danger is not great and can be met. The drill holes close early about the wire and drain readily. Iodin, or other selected antiseptic has ready access to the drilled holes. They need not be very far from the fractured ends, and when we consider that the whole fractured end is subject to the dangers of infection from the wound, the slight added risk of the drill hole becomes less important. Furthermore, a series of practical observations extending over many years has shown the writer practically that a large percentage of fractured bones will heal in spite of and in the presence of wound infection, and the patient is not more liable to a wide

spreading osteomyelitis because his bones are in the proper position, than he would be if the same bones were lying helter-skelter in the same wound. Further, it is the rule and not the exception, that bone union will begin long before the infection is controlled.

Patients should not be subjected to repeated operations, prolonged and expensive after-treatments, to say nothing of the other disadvantages. We have discussed above in connection with delayed bone repair. It is useless to theorize about how much better it is to secure perfect asepsis by the Carrel, or any other method, when as a matter of fact we know that thousands of compound fractures are going to be handled under conditions which will prevent any ideal wound asepsis being reached within six weeks to four months.

It is not intended to urge that all bones should be wired or banded, many compound fractures may be satisfactorily kept in alignment by reasonable splints. Some cases are so simple that, although technically compound fractures, they cease to be compound in a short while and may practically be handled as simple fractures and with very little dressing.

The idea of this paper was distinctly to discuss the ugly cases, having especially in mind various vicious mal-position of bone and well marked infection. One of the bug-bears of using any metallic device on compound fractures has been the danger of leaving such a foreign body in any infected wound. This danger can readily be obviated by planning from the outset to use only temporarily whatever metallic device may be selected. Once a fair amount of connective tissue has united the bone ends, all metallic devices become superfluous from that time on. One of the most important factors in the successful early operation is the removal of the artificial device as soon as it has fulfilled its purpose of maintaining the bone ends in apposition until nature has bridged the gap.

Even the formation of masses of scar tissue around the bone ends will often be quite sufficient to maintain satisfactory apposition with the reasonable help of a splint. The burden thrown upon splints and bandages when fractured ends are free is a heavy one. On the other hand, as soon as fractured ends are so bound by connective tissue, whether it be from the marrow cavity or from surrounding soft tissues, that lateral displacement of bone ends is prevented, splints and bandages may be simpler, and lighter and looser. This means less pain, better circulation, better nutrition, less confinement.

The contrast between splint requirements for recent fractures as compared with those partly united opens up such an important and necessary discussion in itself, that it will be considered at some future time in another paper.

Today's trespass upon your time and attention can only be justified by the importance of more general thought and discussion of the value of early complete operations in compound fractures, so that all the re-constructive forces of the body may be utilized at a time when the vigor of the patient has not been sapped by inactivity, mal-nutrition and sepsis. The paper has not been garnished with illustrative cases because every surgeon who has handled much emergency work can readily supply from his own memory illustrations of the various points emphasized.

DISCUSSION ON THE PAPER OF DR. PERKINS.

Dr. Joseph A. Danna, New Orleans: I think the subject that has been brought before us by Dr. Perkins is very important, and we ought to look at it from the serious viewpoint that it merits. He made a point I would like to lay stress on, and that is, if you do the operation of bone plating or any operation in an ununited fracture of a fracture which is not in good apposition, after connective tissue formation around the ends of that bone, you have the same effect that you would have if you had a skin wound and you did not suture it until it had granulated for two or three weeks. You could not expect union to take place as rapidly and as strongly and as accurately as you would get if you sutured that wound immediately after it was inflicted. This very fact is responsible also for some of the bad repute that operative procedures on fractures have, because a great many men only operate on fractures which are ununited, which have failed to unite with the use of non-operative measures, and they find bones which do not unite very readily. If you take a freshly broken bone and put the two broken ends together, you get firm union in three or four weeks; but if that bone has been surrounded by connective tissue formation, such as you get after three or four weeks of injury, and you put these bones together, you do not get primary bone union at all, and the chances are, unless you cut away the connective tissue covering the ends of the bone, you will not get union, and you are apt to think the operative treatment of fractures is not a good thing.

Dr. Herman B. Gessner, New Orleans: There is one thing that strikes me about the early rectification of deformity in compound fracture, and that is, if we are to limit infection in a compound fracture, if we are to eliminate it as far as possible, we must get early complete immobilization, and it is easier to immobilize the fragments which have been put in proper alignment than those that lie along side each other with considerable overlapping. So far as the danger of infection is concerned, it seems to me that proper sterilization of all exposed surfaces with tincture of iodine, upon which Dr. Perkins laid stress, will obviate that.

There is one point I want to bring out, and that is, in many cases of fracture in which we cut down and bring about operative reduction of the deformity, it is possible to reduce the fracture and get along without the use of a metallic device of any kind. In a fracture of the leg, if the fibula is not badly broken, if tibia is subjected to compound fracture, and especially if the outline of the fracture is irregular, it is possible to reduce the fracture under incision and get the fragments together properly, and then put them up in a splint or cast without using silver wire. I am not partial to the silver wire because so often after wiring bones in the past I have had the wire to break on me. We have had that experience, but I must admit the use of the heaviest wire probably gives good results.

Dr. E. Denegre Martin, New Orleans: We have been using wire for quite a long time in compound fractures. I know what the internal splint is, and I simply want to impress upon those who have not made use of it to do so. In dealing with a compound fracture you have an open wound already. We sterilize the wound as far as we can, put the bones in apposition, and secure them by that method which can be most easily and most quickly applied and at the same time most efficient.

About ten days ago I had a transverse compound fracture of the tibia. I made a big mistake in that case and ought not to have done so. Instead of using strong wire, I put it in apposition and sutured with kangaroo tendon. The kangaroo tendon gave way in ten days.

The best wire to use is what is known as annealed iron wire or bronze aluminum wire. Silver wire will break. You do not know what a source of satisfaction it is to have the bones in perfect alignment. We sometimes use a plate in these cases, at other times wire, or sometimes a band. We let this remain about four weeks when the surrounding tissue forms a gutter to hold the bone in position.

Dr. K. Winfield Ney, New Orleans: Dr. Perkins has brought up a subject which should elicit a good deal of discussion, namely, whether compound fractures subject to infection should be plated or we should put in any foreign body.

One valuable principle in the treatment of compound fractures is that by immobilizing the ends of the bones we get better apposition and do away with a great deal of pain. I have had some experience in dealing with these fractures. While I was in charge of the base hospitals at Cherbourg, there were 700 beds in my service, 20 per cent of these cases were compound fractures of the thigh. I have had on hand as many as one hundred and twenty cases of compound fracture of the thigh at one time. The idea of primary disinfection of these fractures by chemical antiseptics is really out of the question, and although it may be possible, I have never found it to be so, particularly where bony tissue is involved. Bony tissue does not resist infection and pieces slough off after healing has taken place and sinuses persist. The idea, of course, is not to make our work as light as possible, but to get the best results possible in the shortest time. We can do this by the use of the methods advocated in the present war where there is a large amount of this material. We can get practically complete secondary sterilization of wounds, when we can plate them or do the same as we ordinarily do in simple fractures.

With regard to the use of the Lane plate, one necessarily has to bore

holes in the bone and in so doing one opens up other channels in the medullary canal which may become infected. These plates, as a rule, do not hold very long. One thing I have found valuable is a device which has been recommended by Dr. Parham and Dr. Martin. I have used it in many cases and it seems to be reliable in the immobilization of fractures when it is possible to use it.

In so far as wire is concerned, phosphor bronze wire is by far the best.

Dr. A. B. Nelson, Shreveport: Just a word or two with reference to compound fractures because I exposed myself a while ago. The doctor has put it rather strong when he said it is always a question of what to do with a compound fracture, whether to put foreign material in or not. I heard Dr. Cohn, of New Orleans, in 1913, say he was putting on Lane plates in compound fractures and they got well. I went home and had a case of compound fracture of the tibia in an old negro man. I used a Lane plate. The wound suppurated and suppurated until I took it out. It continued to suppurate and finally the fibrous tissue formed over the ends of the bones and I tried to persuade him to let me go down into the wound and do something for him. But he would not let me. I did not get to do anything more. My idea was to transplant a piece of bone, and that is my idea in those cases where the fibrous tissue has formed over the ends of the bone, trim off the little fibrous tissue and bare the ends of the bone. I have made it a practice to bore several holes in the end of the bone, and that gets through the dense portion of the bone and allows blood to pour out through this bone anew. In these cases of ununited fracture I believe the very best thing to do is to transplant a piece of bone.

The splint to which Dr. Salatich referred is a splendid one; we do not have any foreign material in there. It is with fear and trembling that I put foreign material in a case of compound fracture.

Not long ago a dentist in cranking his automobile sustained a compound fracture of the arm. It was an ugly looking thing. He had sense enough not to attempt to pull it back. Being a dentist his livelihood depended upon that arm. I was very particular about that arm as to what I should do with it. I did not put a foreign substance in there. I reduced the fracture, pulled it back, giving him an anesthetic for that purpose. In reducing fractures I give the patient an anesthetic and if he will not submit to that, I tell him I will not set the arm or leg. I have had some bad results otherwise. In the case of the dentist, as I have said, I gave him an anesthetic, reduced the fracture, sewed up the space torn by the bone where it came out and put the arm in this position (indicating) in a plaster cast. I let it stay there two weeks. He did not have more than ordinary reactionary temperature, and at the end of two weeks I took off a portion of this, but he would not allow me to take it all off. I took out the stitches, and while the man has not a normal arm, it is a surprisingly good result.

Dr. Joseph A. Danna, New Orleans: A point I wanted to bring out a while ago was this: If it is possible to keep a foreign body away from the operative wound we should do it. These fractures are usually oblique, and you will find that if you break off the sharpest point of one fragment and insert each end of this broken off fragment into the medulla of each broken end you will be able to keep them from moving

laterally, and after all, that is what any apparatus does. Or, you may drive the sharp end of one fragment into the medulla of the other. You can then put on any kind of splint you please that will keep the limb from bending and get a perfect result.

Dr. Perkins, (closing): I wish to thank the gentlemen for discussing the paper so freely. Dr. Danna brought up two points both of which I think belong to the discussion of this subject. One is that in using a band you may obviate the interposition of the soft tissue, when a later operation would make this dangerous. That is a feature in this work in getting no soft tissue between the bone ends. The other point he emphasized is one I want to take up briefly. In using a Lane plate, a Parham plate, or wire or kangaroo tendon, I do not think any of these are of real value in preventing lateral displacement. Angulation of the bone must be prevented by a splint or by a heavy Lane plate. It is unsafe to use a Lane plate in long wounds which will stop the bone from moving laterally. Torsion and rotation are easily controlled by a splint in almost every kind of fracture work. Angulation can be controlled by splints. Any rigid material will control angulation. Overriding is simply a complication of lateral displacement. The hardest thing of all to control is the side motion. A splint can hardly do it well. It takes a tight splint for a femur to kick up laterally. That is what a piece of wire or Martin band or kangaroo tendon or bone splint does.

With regard to the danger of the wire breaking, a good deal depends upon the quality of the wire which should be carefully selected. The technic of a particular sort is only the use of a method which has been perfected by hammering away at these details. We know that the Matas operation for aneurysm is a success practically, yet Antilles did the same operation, except Dr. Matas made it practically a modern thing.

The wire we buy in the stores is bad. The wire used in the Charity Hospital is bad for some of these cases of compound fractures. We should make bigger holes and use No. 14 gauge B and S silver wire. We have gradually selected bigger and bigger wire until it holds. The next thing is to have it flexible so that you can do anything with it you please and it should be easily removed. We always take ours out in 90 per cent of the cases. We get the wire annealed soft. We get No. 14 size annealed wire of large caliber so that it will not break.

As to the question of not wiring bone fragments, that is readily understood. I am not a wire fiend and I do not stick in silver wire in all these cases. You must exercise your judgment in the use of wire as in anything else. I have been hammering away at this subject for a good many years, and I am convinced that the general propositions laid down in the paper are either correct or I am not able to interpret such experience as I have had in the last twenty years.

CARDIOPTOSIS.*

By A. E. FOSSIER, A. M., M. D., New Orleans.

The ptosis of the heart is of comparative frequency and always found in patients presenting manifestations of Glenard's disease.

Its nomenclature is varied and it is usually found with the following synonyms: Drop heart, pendulous heart, the "cor mobile" of Chechewsky, cardioptosis, or the "Morbo di Rummo" of the Italians, the "wanderherz" of the Germans, and frequently the "bathycardia" of Mosse and Mendelshon.

Pick, in one thousand persons examined by him discovered in sixty per cent a movability of $1\frac{1}{2}$ to 2 c. m. to the left. Einhorn in 926 patients—512 men and 414 women found twenty-two cases of cardioptosis, of which there were eighteen men and four women, a total per centage of 2.4, or about 3.5 per cent in the male and one per cent in the female. The reader has found the drop heart in greater frequency. In over three hundred cases he has found cardioptosis on an average of about 16 per cent, and again contrary to the accepted opinion less frequent in men than in women, about 10 per cent in the former and 22 per cent in the latter. All these cases were clearly defined and presented unquestionable physical and diagnostic signs of cardioptosis.

Thayer recently said: "The striking movability of the heart was not always appreciated. Misconception had often been based on a physical examination of the patient lying on the left side, with the resulting shifting of the apex impulse to a point well outside of the usual position. The change of position of the normal heart sometimes amounts to as much as a hand's breadth as the patient turned from side to side."

Lerch also says that a movable heart with apex beat outside of the mammary line, a systolic blow, an arrhythmia, tachycardia or pseudoangina may immitate heart disease.

And also quoting Greene: That again contrary to current belief both drop heart and its chronic dilatations are extremely common, and indeed, should logically be anticipated in view of our present knowledge of the musculature of the heart.

Chechewsky, in 1887, was the first to demonstrate and determine the degree of lateral movability found in the normal and ptotical heart. He found a lateral movability of 4 to 7.5 c. m.

The etiology of cardioptosis is mooted, and clouded by many writers who at different times argued against the concomitance of

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a drop heart with ptosis of the abdominal organs. Two etiological factors are offered, one that it is the result of a general splanchnoptotic condition and the other a disease per-se, and the exclusion of outside influences due to changes in the thoracic and abdominal cavities.

Cardioptosis means the sagging of the heart from its normal position, with an increased mobility. The heart is maintained in position by various elements, the most prominent of which are its suspension by its great blood vessels, and its support by the diaphragm and by its pericardial ligaments. By resting upon the diaphragm the heart cannot drop unless there is a sagging of the phrenic muscle which is sustained by the upper limit of the liver and by proper abdominal pressure.

If that prop is taken away the heart will drop, otherwise it is bound to retain its proper position. Visceroptosis is absolutely the causative factor of cardioptosis, in other words it is a symptom of Glenard's disease. It is logical to hold that the pushing up of the diaphragm by an increased intra-abdominal pressure by pregnancy, ascites, tumors in abdominal cavities and well fitting corsets and abdominal bandages will raise the heart above its normal position, as a depressed state of the diaphragm caused by a lack of abdominal pressure as found in the enteroptotic habit will cause cardioptosis.

Glenard, Hammett, Satterthwaite, Einhorn, Abrams, Greene, Lerch, and others claim that it is constantly associated with visceroptosis. The most prominent advocate of cardioptosis as a primary disease is Rummo and his school. He describes a type of this abnormality known as the *Morbo di Rummo*, in which the cardioptosis depends on the primary relaxation of the elastic support of the heart. That organ may not vary in size or weight but its supports are weakened and relaxed. As the vascular peduncles relax, the heart adapts itself by gravitating upon the diaphragm. The drop of the heart varies according to the tenacity of the phrenic muscle. Rummo further claims that the essential cause of cardioptosis must be a uropathic condition, which means a congenital dystrophy of the elastic tissues. Yet he describes his cases as having long and flat thorax, long extremities, large intercostal spaces, stagnation of venous circulation and with general asthenia and all the nervous disturbances: all ear-marks of a general congenital visceroptosis.

He explains the emphysematous condition, so frequently found as an accompaniment to the drop heart, to relaxation of the air vesicles. The lungs are rich in elastic tissues and are readily affected in a uropatic individual. Whilst this is possible it is highly improbable.

This very drop of the diaphragm increases the size and contents of the thorax at the expense of that of the abdominal cavity. Nature abhors a vacuum and the lungs must increase their volume in order to adapt themselves to the greater thoracic cavity.

In reality it is a pseudo-emphysema, the lungs are in a state of distention, and this condition is relieved by an increase of the abdominal pressure and the forcing upward of the diaphragm. We occasionally find drop hearts which must be classified as acquired. The conditions prevail in the obese as well as in the emaciated. Too rapid a reduction in weight either therapeutical or pathological, without the proper safeguard of proportionately supporting and increasing the abdominal muscles, will cause a sagging of the belly and many times with it, the heart. It frequently follows confinement especially when the patient is discharged too soon after the delivery. In either case there is an hepaptosis and frequently a pantosis. It is sometimes observed in the young and robust, even in the athlete, when neither their efficiency nor their ability has in no wise been impaired to perform laborious work. Cardiop-tosis is always found in individuals presenting manifestations of the habitus enteropticus. These patients, as a rule, are tall and slim, and usually poorly nourished. Inspection reveals, generally, a small head, long neck, and elongated, narrow and flat chest, prominent ribs and wide intercostal spaces with the subcostal angle very acute.

The epigastrium sunken and the belly pendulous and protruding. The abdominal muscles are frequently flabby or they may be thin and rigid with marked diastasis of the recti muscles. The veins of the abdomen are enlarged and plainly visible, showing marked venous congestion. The spine flattened and elongated.

A physical examination usually reveals the apex beat lowered, the line of both the relative and absolute dullness of the liver downward displaced, the stomach prolapsed, its lower curvature at or below the navel. The right or occasionally the left kidney may be palpated. The cecum, ascending or transverse or sigmoid flexure may be contracted or found gurgling on palpation.

These patients are in a state of general asthenia. They complain of great mental and physical weariness, even to inability to perform their usual work and an urgent desire for rest in the recumbent position.

Occasionally we find a presenility of mind and as well of body, the arteries are contracted and the arcus senilis present in early middle life. In these cases the blood pressure is low, ranging from 80 to 100 mm Hg. This is explained by Hirschfelder who claims that the traction and the pressure upon both the vena cavae and the arteries render both the inflow and outflow difficult, and this brings a high venous and a low arterial pressure. Greene also says that the blood pressure is seldom raised and usually remains below 100. Kraus and Herz called attention to cardioneurotic symptoms which occur in all narrow chested individuals. Lerch said that a premature contraction of the arteries often gives the impression of sclerosis, he thinks it is a defensive measure of nature "to assist the heart."

Murmurs are frequently heard in drop heart and disappear on position, they are auscultated sometimes in a reclining and sometimes in the standing position. They are in character functional, accidental, and may be due to relative insufficiency. These murmurs are commonly systolic over the apex, and they may be occasionally transmitted to the left. Unless the cor mobile is recognized and the heart fully mapped out errors are unavoidable. The reader reported similar cases at the 1910 meeting of this society.

Cardioptosis is the cause of many nervous disturbances of the heart, expressed in terms of cardioneurosis, neurasthenic heart, etc. The irritation of the terminal nerves of the myocardium and the great blood vessels, due to the continued tugging and pulling of these organs causes the attendant neurosis and functional disturbances. Precordial pains and oppression, anxiety, fear, dyspnea, palpitation, slow and rapid pulse, arrhythmia, pseudoanginal attacks and epigastric pulsation are frequent symptoms of movable heart.

A movable heart is diagnosed by its location, shape and size, its relation to the diaphragm, and the flapping of that organ from side to side on change of posture. Its association with enteroptosis, and the build of the individual are of inestimable diagnostic value.

A correct technic of percussion and individual skill are amply

sufficient for the diagnosis of this condition. The X-ray is useful in the study of these cases, but its value is not near as great and its findings as accurate as we are led to believe by some authors. We must not lose sight that the advent of the rays has added but little to the knowledge of cardioposis. We are indebted for its discovery and fundamentals to Charchewsky, Glenard, Einhorn, Brown, Detterman, Pick, Rummo, Ferannini and others who reported the results of their observations before the advent or perfection of the Röntgen rays.

Two typical and distinct types of movable heart are made out by percussion. One represents the heart as elongated and drawn out, the transverse diameter small and the vertical greatly increased, and in the other the heart is very small and round with narrowed and elongated blood vessels. These two types of cor mobile are confirmed both by the X-ray and percussion as illustrated by Shattuck and Lerch.

The movability is easily made out; the patient in a supine posture is made to rotate from right to left. The apex beat and borders of the heart are marked on the skin when he is on the back or lying on either sides. The space that the heart has traveled determines the amount of its movability. Normally the heart is situated obliquely in the chest and forms a vertical angle with the broad elliptic portion of the diaphragm which is horizontal and on which it rests. It is well supported by the phrenic muscles and laterally firmly imbedded between its domes which prevents any but the slightest movability.

The height of the diaphragm varies according to an increase or decrease of abdominal pressure. The basic principle of enteroposis being a diminution of this pressure, this muscle drops, and the vertical diameter of the chest is proportionately increased. The heart loses this support and as it drops it rotates from left to right, its oblique position is changed to a vertical one, presenting a narrowed and elongated appearance. This cardiac imbedding between the domes of the diaphragm varies in health and in the drop heart, and its recognition is a cardinal point in the diagnosis of this condition. In normal cases the heart sinks below the plane of the highest point of the two diaphragmatic domes to the extent of not less than 2.5 c. m. to more than 4 c. m. corresponding to a third or a fourth of the vertical diameter of the heart at its center. In cardioposis it is nearly always sunken to a depth of 1.5 to 2 c. m. about one quarter or a fifth of the vertical diameter. Nor-

mally the heart and liver make an adjacent angle, the vertex of which is formed by the heart resting on the diaphragm, and the sides by the cardiac wall and the hepatic line of absolute and relative dullness.

The lesser these angles the greater the stability of the heart. But the change from the oblique to the vertical cardiac position and the concomitant hepatosis causes a greater cardio-hepatic angle with corresponding movability of that organ.

The so called small heart of the enteroptotic and tubercular is usually the result of an increase of its vertical diameter at the expense of the transverse, and this relative small width is due more to its rotation on its axis than to its actual size.

It has been the privilege of the reader to observe a few cases after a year or more of treatment, and he invariably found the transverse diameter increased from 7 to 8 to 9 to 10 c. m. and the vertical diminished proportionately. Which results can be attributed to an increased abdominal pressure brought about by proper nutrition, exercise and a well fitted abdominal support.

DISCUSSION ON THE PAPER OF DR. FOSSIER.

Dr. A. B. Nelson, Shreveport: My first intimation that we can have a dropped heart occurred some years ago during a little X-ray work. We were making some X-ray pictures of the chest, studying the lungs, and my attention was called to it by the radiologist, and I have noticed it somewhat since, but not very much. This work being out of my line, I have not taken so much stock in that work. However it seems quite reasonable to me that where you have splanchnoptosis or the dropping of all organs, those of the abdomen particularly, the intra-abdominal pressure would be lessened and, in all probability, there would be a sinking of the diaphragm as the doctor has pointed out, and hence, dropping of the heart. I cannot reason it out in any other way. What disturbs me is the line of cases to which the doctor has referred in speaking of small heart. We know that the heart is not always regular in size, that it may hang higher. There is no reason why it should not be, so that one patient should have an abnormally small head, microcephalus, and why another individual should not have a small heart, and we might call that microcardia or something of that kind, but this heart may hang from the vessels, all of the weight of which would be on the vessels and on the ligaments, and not resting as it ordinarily does upon the diaphragm, because it would be hardly long enough to reach the diaphragm, as it normally does. All of this weight would be upon the vessels and would cause them to lengthen more or less.

As to the symptoms coming from the heart, I do not agree with the essayist. In my opinion it is a symptom complex of this visceroptosis and the natural absorption of the toxins which accompanies all of these conditions of splanchnoptosis.

As to whether there is a change in the heart muscle it would probably depend upon this condition—I mean upon the absorption of the toxins and the general debility of the patient; and a change in connective tissue in the heart and the musculature of the heart would all depend I think upon the visceroptosis, and the resulting symptoms would come from that and not necessarily from the heart itself.

As to the use of the X-ray in connection with this work, I have found that I have to depend upon it for my diagnosis in these cases largely, for any other finer points. I do not see why the X-ray would not outline this condition if it is properly applied. I think it would, because if we take an X-ray picture at a certain distance from the body, each time you will get a regular picture. If you got further away, and took one picture at six inches from the patient's body and the next time another picture eight or ten inches, you could not tell anything about it. I believe you get an accurate picture by being accurate, and I would have to depend upon that anyway.

Furthermore, I believe that this disease occurs oftener in women than in men, because we find visceroptosis more frequently in women.

I would like to hear other members of the Society express themselves on this subject.

Dr. Sidney K. Simon, New Orleans: We have all noticed in cases of congenital visceroptosis the fact that, as a general rule, the apex beat of the heart is displaced downward to the left, a condition that ordinarily would suggest enlargement of the heart. I have always felt that the explanation of that was the peculiar deformity of the thorax we find in these cases of visceroptosis, which was described by Stiller, of Prague, and known as the Stiller thorax with a very narrow epigastric angle from the long wing thorax. In other words, enlargement of the thorax cavity at the expense of the abdominal cavity. It is because of that mechanical defect these people, when they come into the world, show displacements of the kidneys, of the stomach, and even of the spleen, and at times even of the liver. The apparent displacement of the heart in those cases has seemed to me to be merely what you might call a defect, pure and simple, without being an actual displacement of the heart. If the heart is down because the chest wall is compressed at its lower axis, the thoracic wall is squeezed. That is the appearance it has because of the narrow epigastric angle.

I believe that to dignify cardioposis as a clinical entity is wrong. I believe that we doctors should consider visceroptosis or Glenard's disease; we should call it Glenard's disease as a general clinical condition; that we should not pick out any particular organ for special mention. I believe we ought to get away from that. We are gradually getting away from it, and I do not believe the practice of anchoring kidneys is done anywhere near as frequently today as it was formerly. Practitioners consider visceroptosis as a general diseased state and deformity of the abdomen should be treated along general lines and not individualized on any particular organ that happens to be ptotic.

Another point we should remember is that the heart might happen to be at a lower insertion than it normally is. I do not know of anything more important in the neurotic type of individual with which we are dealing in this condition than this, knowing that would tend to make the general condition or the mental state of the individual worse than

to call attention to a displaced heart. The laity cannot grasp its true and essential meaning.

As to the symptoms Dr. Fossier brought out, I believe we all recognize the symptoms as we analyze them and find them in connection with Glenard's disease, whether it is a ptosed kidney or stomach, or transverse colon or a ptosed heart. I believe the symptom group remains the same; we have the same type of general neurosis, the same disturbances of the abdominal organs and a general neurosis.

Dr. Adolph Henriques, New Orleans: Dr. Fossier spoke of the increased volume of the lungs as a result of the lowered diaphragm. If we have an increase of the lung volume, one would conclude from that increase there would be an increase in function. As a matter of fact, in many of these cases the excursion of the diaphragm is very much limited. Ordinarily, we see an excursion of two and a half inches; in some of these ptosis cases it may be as little as an inch, and in still others it is scarcely perceptible. I have noted an interesting fact connected with this, namely, by increasing the intra-abdominal pressure, simply by laying the hand at right angles to the abdomen and making a little pressure at right angles to the long axis of the body we can raise the diaphragm considerably, often more than an inch, and in spite of this increased height there is an increased excursion of the diaphragm, permitting thereby increased ventilation of the lung. It has been my observation from the use of the X-ray that we find this ptosis of the heart very frequently without any symptoms at all in the course of a routine examination. This subject was discussed pro and con some time ago by X-ray men, and the almost unanimous opinion was reached that it did not make any difference where an organ was so long as it performed its functions properly. Occasionally these cases do present symptoms.

I want to take exception to the doctor's statement as to the X-ray not adding much to our knowledge of the position of the heart. Dr. Bel and I had the pleasure of undertaking some observations in common as to the alterations in position of the heart due to alteration in the positions of the body. We found that by changing from the right lateral to the left lateral position the heart would move as much as an inch and a half or an inch and three-quarters from side to side. We found that in changing from the prone to the supine posture the borders of the heart would move as much as half an inch. In changing from the erect to the recumbent position the diaphragm and also the heart would move upward, the apex moving towards the left. Contrary to Dr. Fossier's view in these cases of cardioptosis we never see the apex displaced to the left unless there is some hypertrophy associated with disease of the heart; the apex is always more to the median line.

A very interesting observation as to the effect of respiration on displacement of the heart was made. We found that in an individual with a marked excursion of the diaphragm the apex moved as much as four inches from extreme inspiration to extreme expiration. I was much surprised to make that observation. I do not believe we can percuss out the outlines of the heart accurately after a deep expiration on the part of the patient, the patient maintaining the expiration during the percussion.

A Member: I would like to ask the essayist or any member of the

Society if he has ever seen a case of pure ptosis of one organ alone? Is it ever possible to have ptosis of one organ aside from hernia?

Dr. Adolph Henriques, New Orleans: It is quite possible to have it, although a ptosis of several organs is more frequent.

Dr. Fossier (closing) With reference to the remarks of Dr. Nelson, hearts vary in size according to the size of the individual. Some have small whilst others have large hearts. Whenever we find an individual with a small heart, it is generally associated with diseases of mal nutrition and tuberculosis. These small hearts are found in men as well as women. They have elongated, narrowed and flattened chests, prominent ribs and wide intercostal spaces with very acute subcostal angle. They are all neurotics and sufferers of Glenard's Disease. I have observed small heart in another type of individual, especially in women with a badly nourished upper portion of chest. The face is drawn, the chest is thin, and there is a marked lack of development of the breast, but they have large hips and legs. In other words they have a badly nourished upper extremity and an over developed lower portion of the body. I wish it to be distinctly and thoroughly understood that I do not depreciate the use of the X-rays, but only wish to emphasize that we cannot send all our cases with drop hearts to radiologists. Clinicians should diagnose these conditions without the help of the X-ray expert.

The X-ray observations of Drs. Henriques and Bel as to cardiac mobility are arguments that percussion is amply sufficient to make a diagnosis in this condition, for the doctors have confirmed with the rays the observations of men who had reported the results of their experience before the discovery and perfection of the Röntgen rays.

In answer to Dr. Simon I will state that generally the symptoms of Glenard's Disease do not depend on any particular organ, but on the ptotical condition of many or of all the abdominal organs, yet not infrequently we do observe symptoms that can only be attributed to a particular organ or a group of organs, i. e., cardiac symptoms in cardioposis, Dietl's crisis, etc.

ORAL PROPHYLAXIS AT THE SCHOOL AGE.*

By HAIDEE WEEKS GUTHRIE, D. D. S., New Orleans.

In Strasburg, in 1902, was established the first free dental clinic. In five years there were 90,017 children given free treatment at a cost to the City of 7 c. each for examination and extraction and 25 c. each for treatment and filling. This clinic is now conducted in a \$60,000 building owned by the state. Germany has now two hundred dental school clinics; London has only seven dental school clinics and the conditions are even worse there than in the United States. Mexico has established free dental school clinics. The

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first free dental school clinic in this country was established in Rochester, N. Y. in 1905. New York City had five free dental clinics in 1914. They were supported at first by the dental societies and philanthropic organizations. Now, however, for the current expenses the municipal government sets aside \$29,000 yearly for maintenance.

The first clinic exclusively for school children in New York City cost for the treatment of each child including equipment, \$4.10. In New York City the cost of educating the child is estimated at \$40.00 per year. One school was taken as a fair criterion of the general conditions, the number of absentees due to toothache and other mouth troubles of dental origin was recorded. Here were found absentees receiving dental care, 38 per cent; absentees not receiving dental care, 94 per cent. It is estimated that in New York City, 80 per cent of the absentees is due to aching teeth or illness therefrom. If the same rate obtains throughout the year the loss of money to the City equals an enormous sum. The Russell Sage Foundation Fund reported that among 7,608 children examined, children with defective teeth progressed 6 per cent more slowly than normal children.

In New York, where 700,000 school children are given daily tooth brush drill, all between the ages of six and eight years are kept under constant dental supervision at public expense. This move resulted after the Department of Health discovered, as a result of a dental survey, that nine out of every ten children in the City Schools had defective teeth. The same ratio probably holds good in most other cities.

These facts point to a national need for mouth betterment. Fortunately it is a matter which the individual can easily and cheaply control, if the habit of use of a tooth brush be formed early enough in life.

The survey in the New York Public Schools revealed the following after a thorough examination of the oral cavity: Of one thousand six hundred and seventy-eight children examined between the ages of five and fifteen years, 164 had healthy gums, four hundred and twenty-nine had healthy gums but decayed teeth, six hundred forty-nine had diseased gums, 35 per cent of the children between five and seven years, showed the presence of disease germs in the mouth, 60 per cent between five and fifteen years showed the same condition.

In another examination of two thousand persons for physical defects, that could be cured before culminating in definite disease, the physicians of the American Museum of Safety of New York, found that 25 per cent of the two thousand cases were affected with pyorrhea and dental defects unsuspected by the afflicted persons. Other group examinations by physicians doing welfare work have revealed the same and sometimes a higher percentage of affections of the mouth. This emphasizes the need of periodic examination of the oral cavity as a preventive against disease.

A report from Dr. R. Ottolengui of the Brooklyn Public Schools for 1913 shows the average service rendered each child in round numbers as follows:

Permanent teeth extracted	1
Temporary teeth extracted	1
Fillings	6
Root treatment.	1
Teeth cleaned.	1

In addition frequent prophylactic treatment.

Tabulated the results follow:

Average increase per child—

Studies.	10%
Deportment.	14%
Attendance.	12%
Mal-nutrition cases cured or improved.....	95%
Repeaters.	30%

In Chicago the work of caring for the neglected teeth of poor children is on a permanent basis. Dental infirmaries located in public school buildings and equipped by dental supply houses and by private endowments are maintained. Examination of fully 300,000 showed about 95 per cent in need of dental service. An endowment of \$10,000 a year for ten additional infirmaries and salaries, until such time as the City can be induced to take on the work has been given by Mr. Julius Rosenwald, a public spirited citizen.

One of Chicago's experience in dental clinic work will appeal especially to the medical profession. During the epidemic of scarlet fever those affected were, of course, sent away from school, quarantined, all usual precautions taken, and the children were not allowed to return until clinically well. This return to school was followed by a fresh outbreak of the disease, the cause of which could not be determined for a long time. After enforcing a regulation compelling each child to have his mouth thoroughly

cleansed, and every cavity filled, before returning to school, the epidemic was stopped.

St. Vincent's Orphan Asylum, Boston, Mass., during 1905-6 was in quarantine for three months on account of contagious disease. In the year preceding the establishment of the dental clinic there were over one hundred cases of contagious disease. In six months the number diminished 50 per cent and the subsequent year, after establishing the dental clinic, to 2 per cent.

Boston has the Forsyth Dental Infirmary with an endowment of \$2,000,000; Rochester, N. Y. has a similar institution, also the gift of public spirited citizens, Mr. Geo. Eastman, Capt. Henry Lomb and Mr. William Bausch.

In Cleveland, Ohio, 97 per cent of the children were found to have defective mouths. In the undertaking of this research, 27 children having the greatest number of oral defects were chosen in a school of 846. After treatment these showed an increase of 99.8 per cent in efficiency for school work. This was due to the correction of oral defects and to proper care and use of the mouth. The moral and physical improvement was as marked as the mental uplift. At the close of the arithmetic lesson each day 60,000 school children of Cleveland Public Schools lay down their pencils, pick up their tooth brushes, and spend five minutes in cleaning their teeth. In Cleveland a general inspection of one school (Marion) was made by ten dentists and out of eight hundred forty-six children examined, only three were found whose oral condition was perfect. The improvement in efficiency was startling to the principal who expressed herself as follows:

"Undoubted proof was established that by keeping the teeth in perfect condition, by living up to the laws of oral hygiene, these twenty-seven children doubled their mental ability, gained in power and endurance and bodily strength, and showed marked improvement in personal appearance and habits. A physical, mental and moral gain in the child produces an economic and financial gain to the community. Can any one question that a practical, working knowledge of oral hygiene is worth while?"

In Detroit, and Muskegon, Michigan, the result of dental inspection and treatment has brought about noticeable change in the school work of the heretofore backward children—"the cost, that is, money value saved as represented by non-promotion, far exceeded the expense of the clinic."

The second annual report of the Dental Commission of Bridgeport, Connecticut, is as follows:

From September, 1915 to June 21, 1916.

Corps comprises fourteen dental hygienists, two supervisors and a woman dentist, in 1916 an additional hygienist was appointed.

Phophylactic treatments given.	10,990
Children receiving one treatment.....	20,850
Children receiving two or more treatments.....	1,890
Children attending stereopticon lectures.....	9,100
Children receiving tooth brush drills.....	18,000
Tooth brushes sold in school.....	5,150

International Congress on School Hygiene, Sept. 14, pp. 772, has the following to say:

“Repeaters”—Children who cannot keep up with their grades are called “repeaters.” There are about 3,000,000 such children in the United States and it costs about \$1,000,000,000 to educate or try to educate them. A very large majority of these 3,000,000 children can be kept from repeating by relieving them of their physical defects or disease. All repeating children are a detriment to everybody in the school room, and they should either be cured of repeating or be placed in separate schools. They frequently hold back an entire class. The teacher has either to neglect the balance of the class for their benefit or the progressive scholars are taught at the expense of the laggard.”

The annual report of the Toronto Dental Clinics shows a steady reduction in the number of pupils suffering from dental defects. Just previous to the establishment of the school clinics, 95 per cent were affected with dental defects. In 1915, examination of eighty-six schools showed the percentage of children with dental defects had been reduced to 65 per cent. The percentage covering all the schools in the City has been actually reduced to 51 per cent; forty-nine children in one hundred are absolutely free from dental defects, exclusive of cases of irregularity of teeth.

In 1916—

Children relieved from toothache.....	2,345
Number of completed cases.....	5,730
Total number of operations.....	14,730

In the Kingsley House settlement there are 941 children. All of these have been brought to my clinic at the Woman's Dispensary during the last three years. Besides these children there are many others who live in the densely populated district in which the Dispensary is located and numbers who come from a distance. Most

of these children attend the public schools and many, the parochial schools. I have had the opportunity to watch the mouths of these children during three years and have kept careful records of all the cases treated or examined.

My own records show 99 per cent of these children have defective teeth; 80 per cent show decay of permanent teeth; 40 per cent between seven and nine years had lost their first molars—the most important tooth in the mouth; 98 per cent did not own a tooth brush.

The clinic is for the poor, without regard to race, creed or color. A child who receives a service at the clinic is provided with a tooth brush. If, at a future time, he presents himself for further work and has not used the brush, he is refused admission for the time being.

The mouths are in a relatively aseptic condition and all cavities filled when dismissed. Each child has been lectured that “clean teeth do not decay” and minute instructions as to how to brush the teeth given so there is no further cause for an unclean mouth. Once a month, in squads of twenty, a tooth brush drill to music is given.

My own statistics compiled from these records are as follows:

From April, 1916 to May, 1917.

Total number of patients examined and completed ..	784
Total number of sealings	750
Total number of treatments	635
Total number of amalgam fillings.	236
Total number of cement and gutta percha.	800
Total number of deciduous teeth extracted.	1,300
Total number of permanent teeth	650
Total number of abscesses with sinus.	687
Total number of necrosed bone	252
Total number of impacted 3rd molars	19
Total number of Hutchinson teeth	21
Total number of exostosis.	4
Total number of porcelain teeth.	11
Total number of perfect mouths.	8
Total number of Wassermans made.	37
Total number of microscopic examinations.	265
Total number of radiographs.	55
Total number of orthodontia.	35

The comparison of statistical findings of my own records with those of New York, Chicago, Cincinnati, Bridgeport, seems to justify the conclusion that age for age there is a higher percentage

of diseased conditions due to oral infections here than in the above named cities. A possible explanation of this may be the fact of the earlier eruption (eight to twelve months) here than in more northern regions. This I have also been able to establish in the analysis of my records.

If the procedures of dental hygiene are intensely applied from the kindergarten through the third grade, there is very little need for reparative work during later years of childhood.

In examining the records available, the lowest co-efficient of improvement found was in the case of New York. Here the improvement was 35 per cent. Cleveland showed 98 per cent, Toronto, 65 per cent, Chicago, 40 per cent—we are justified in expecting in New Orleans, at least a 33 1/3 per cent improvement.

In the public schools of New Orleans during the session of 1914-15, it was found that 15 per cent of the boys and 13 per cent of the girls were repeaters, a total of about 4,000. The annual cost of educating a child is \$31.89 based on a daily per capita expense of 19.2 cents. The aggregate cost of caring for the repeaters in the schools of New Orleans is, on the above basis, \$127,560.00. At least 33 1/3 per cent of the unnecessary expense of carrying repeaters could be saved in the New Orleans Public Schools through the institution of dental clinics. This makes a startling total of \$42,500 a year. This saving could be accomplished at a total cost of \$3.00 per capita for the first year of operation, including cost of initial equipment. We should, therefore, be able to accomplish a net saving to the school fund of \$30,500 for the first year.

The medical world has for a number of years concerned itself with carriers of the bacilli of diphtheria and of typhoid fever. In the light of our knowledge of the bacterial flora of the mouth, persons with carious teeth or suppuration must be also considered as probable carriers of pathogenic organisms, with streptococci and pneumococci taking the first rank. Hence there is involved a double problem in prophylaxis. First a protection of his own organs against bacterial invasion or damage from toxins, second, protection of other individuals against a strain of foreign organisms.

The removal of focal infections is the keynote to modern prophylaxis. Surely it is still better prophylaxis to institute a scheme that shall avoid altogether a very large number of focal infections.

Medical inspection of the schools has won its place among public health measures. No scheme of medical inspection can be complete which does not include a system of regular inspection of the teeth and some effort to put the child in the way of having defects remedied. The preservation of the man power of the nation demands all safe-guards for the child. Let us hope that the needs for the millions of recruits who shall have opposing molars will not always be the motive toward prophylaxis. However, it takes opposing molars to work as well as to fight.

If the plea for greater efficiency is not heard or heeded, perhaps the plea for four opposing molars may move the nation to action in this direction.

MEETING AMERICAN MEDICAL ASSOCIATION.*

By P. B. SALATICH, M. D., New Orleans.

The opening meeting of the Sixty-eighth Annual Session of the American Medical Association, in New York City, June 4 to 8, 1917, was held in the grand ball room of the Waldorf Astoria Hotel at 8:15 P. M.

The meeting was called to order by the President, Dr. Rupert Blue, who introduced Dr. Wendell C. Phillips, Chairman of the Committee on arrangements. He made several announcements relative to the session and then spoke of the death line in New York City. He said there was no death line in New York as in Baltimore and to corroborate his statement he introduced Dr. Smith, a well preserved, active and erect specimen of only 95 years. Sitting next to Dr. Smith was Dr. Abraham Jacobi, another youth of 85. Dr. Jacobi was not in Dr. Smith's class; he seemed older than his almost centenarian friend.

Dr. Alexander Lambert, President of the Medical Society of the State of New York was next introduced. He welcomed the members in behalf of the State of New York.

The Academy of Medicine of New York welcomed the members through its President, Dr. Walter B. James.

The President elect, Dr. Charles H. Mayo was then introduced

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and installed. He prefaced his remarks by saying that the war occupied such a prominent position now that it would be out of place if he did not say something about it. He spoke on preparedness and said it would not be necessary to draft doctors he thought, and felt sure there would be enough volunteers. He said what should be practiced now was tongue control more than birth control. He ended by thanking the association for having elected him to the presidency of the greatest medical society in the world. The opening meeting then adjourned.

The Section on Obstetrics, Gynecology and Abdominal Surgery met in the Astor Gallery of the Waldorf-Astoria.

The chairman, Dr. H. W. Longyear of Detroit opened the session; his address was *The Relations of the Gynecologist to the General Surgeon, Past and Present*.

The next paper was by C. Henry Davis of Chicago. This paper was on the *Relative Efficiency and Toxicity of Chloroform, Ether and Nitrous Oxid-Oxygen in Pregnancy and Labor*. His paper and the discussions came to the following conclusions:—Chloroform for periods of short intervals and to divert the attention of the patient. Nitrous oxide during the second stage and ether for long procedures, such as forceps, etc. It was also concluded that ether was the safest anesthetic in toxic cases, especially in cases of liver involvement.

The next paper was the *Pathological and Clinical Significance of Chronic Endo-cervicitis* by Dr. Arnold Sturmdorf of New York. He brought out his operation which consists of a double flap of the vagina; he then removes the Cervical canal in a wedge shape and sutures the flaps on anterior and posterior to the cervical canal at the internal os. The treatment by the cautery was discussed and several men condemned it on account of the scarring resulting after this method.

The next paper was by Dr. J. Osborne Polak of Brooklyn. *Why the Menstrual Function should be Preserved in Double Suppurative Diseases of the Tubes*. The doctor described an operation in which he removes the uterus including the cervix but preserving the sides of the uterus so as not to disturb the circulation of the ovaries. In spite of the entire uterus being removed including the mucous membrane of the uterus, these patients menstruated regularly. Where this menstruation comes from, this was not brought out. Some thought from the cervix, others from the top of the

vagina. Dr. Polak said ovulation without menstruation is valueless from a psychological standpoint. A conserved ovary with a disturbed circulation has a short-lived function.

A symposium was then held on the influence of Labor in the Brain Development of the Child, by Dr. Arthur Stein. This subject was freely discussed, some advocated opening the skull immediately after delivery for pressure symptom. The conclusions were that the pregnant woman should be carefully studied before delivery and every means taken to assist a prolonged second stage, where the danger of pressure and resulting pressure symptom resulting after delivery.

The next paper in this section not being very interesting, I attended the Surgical Section. Dr. William O. Sherrman of Pittsburgh read a very interesting paper, especially at this time, on the Abortive Treatment of Infection. He showed several pictures, lantern slides and motion pictures to demonstrate that this method of treating was a positive and not imaginary method. The following technic as gathered by the speaker and other men who have used the method at the front, was as follows: When a patient is brought to the hospital, his wound is thoroughly cleansed and this must be done in the strictest sense of the word. All foreign substances must be removed, and any dead or hanging tissues removed just as if you were preparing to do a laparotomy. All this must be done if possible with instruments and keeping the fingers out of the wound. The plain tubes are introduced, to the bottom especially in the upper angle of the wound. These tubes are made by tying off the ends of the tubes and using a punch to puncture several very minute holes in the ends of the tubes. Several of these tubes are laid at the bottom of the wound. Then if you want to place some on the surface, the same kind of tube is used but the ends are wrapped with toweling material so as to keep them from slipping. Vaseline (yellow) is now freely smeared around the outside of the wound and then covered with gauze. This must be done with care for the chlorine fumes in Carrel's solution is very irritating to the tissues. A light dressing is then placed around the top of the wound and limb and either a French dressing, which consists of a one piece bandage laced or few rolls of bandage. The solution is allowed to run in for two hours then stopped for two hours. This must be used as a gentle spray on the tissues and not as a drip. In twenty-four hours the

dressings are removed with forceps and the wound thoroughly rubbed so as to cleanse the surface thoroughly. The tubes are either changed or sterilized and the same method as above described carried out. Each day before washing the wound a smear is made of the secretion and when the smears show only one organism in 5 or 10 fields the wound is then ready to suture. It is surprising how small the granulations are by this method and how quickly they formed and how little bleeding is attended in vigorously rubbing of the granulating surface.

The scars in these cases are very small as compared to other infected scars. Fractures heal twice as fast with this treatment. The discussions were many and the authors together with other men reported of septic abortion and puerperal sepsis, appendicitis, liver abscesses treated by the Carrel method. Dr. Sherrman has devised a vaginal apparatus to be used in cases of sepsis uteri. This can be purchased from Harvey R. Pierce of Philadelphia.

The next paper of interest at the Obstetrical and Gynecology session was a paper by Drs. Guy L. Hunner and George L. Stickney of Baltimore. Their paper was on Further notes on a Rare Type of Bladder Ulcer with Report of Eighteen Cases. This was a very interesting paper. It dealt with those cases of bladder trouble, giving the following symptoms: Painful micturition, pain in lower abdomen and on pressure. Examination of the urine shows no pathology and the patients are often operated for all kinds of pelvic or other lesions, without relief. Cystoscopic examination is often misleading. If very careful search is made, one or more small ulcers are found at the vertex or free portion of the bladder. On opening the abdomen and exposing the bladder you are surprised to find almost the entire bladder thickened and the only operation is to remove the entire infiltrated area, which often comprises the entire free portion of the bladder. After the operation the bladder is only large enough to admit the finger, but this soon stretches and in the author's cases, after a month's time patients could hold several ounces of urine in her bladder, and quite often not need to get up at night to void. This, the author claims, is the only means of curing these troublesome cases.

Ovarian Organotherapy was described by Dr. William P. Graves of Boston. The paper dealt with the use of the whole ovary instead of the corpus-luteum. Several reported good results with the corpus-luteum alone and claimed that the reason better results

were not obtained was because it was not used in large enough amounts.

Dr. Robert E. Farr of Minneapolis read a paper on the Technic and Scope of Local Anesthesia in Abdominal Surgery. The point of interest in this paper was an apparatus devised by the author in which he forces compressed air in cylinder and has these connected with rubber tubing and a device by which he can control the injection of the solution. This apparatus does away with hypodermic syringe and diminishes the time necessary to anesthetize a region.

Several papers were read on Cholecystostomy and Cholecystectomy. It seemed to be an even draw between Cholecystostomy and Cholecystectomy; probably a small majority for the latter.

The old familiar subject Colectomy was discussed. A paper was read by Dr. Charles A. L. Read of Cincinnati entitled Physiologic Colectomy.

Dr. Charles Mayo read a paper for Dr. William J. Mayo on Diverticulitis of the Large Intestine. He mentioned four groups (1) Left side inflammatory symptoms with tumor; spontaneous disappearance, occasional relapse. (2) Peritonitis, abscess, etc., resulting in secondary fistulas to the surface interintestines but most common into the bladder. (3) Diverticulitis with chronic thickening simulating malignant disease and obstruction. (4) Carcinomatous development on diverticula.

Dr. J. Walter Vaughn of Detroit read a very interesting paper which might prove a very valuable assistance in determining metastasis in malignant growth. His paper was entitled "When is Cancer Operable?" He showed by experiment an immune mechanism located in the spleen. His experiments deal especially with the variation in the number of polymorphonuclear neutrophiles. If metastasis is taking place there is an increase of these cells and he is attempting to prove whether the case has resulted in metastasis at the time of the operation, by this method.

Dr. James F. Percy of Salesburg, Ill., read a paper on the End Result of the Treatment of Inoperable Uterine Cancer by Heat. It would appear at the discussion as if the European war had been transferred to the hall judging from the pros and cons for low heat and white or lead heat or no heat at all.

Dr. Henry Schmitz of Chicago read a paper on The Present Status of Radium Therapy in Diseases of Women. He concluded

that radium acts very well in metrorrhagic cases and said, depending on the dose he could control ovulation and further menstruation, reporting a case of impregnation occurring six months after small doses of radium had been used. For fibroids, especially intramural fibroids, a high percentage was cured. He did not advise it in the subperitoneal polypi variety. He claimed he got as good results with radium as he did with the Percy low heat method.

The election of Dr. Brooke M. Anspech of Philadelphia this year's Secretary to the Chairmanship for next year ended the session.

On Thursday at 8:15 the third evening of the session, a Patriotic Rally was tendered to the visiting members, which was held at the Hippodrome and given by the local committee on arrangements. Dr. Wendell Philips, Chairman, Dr. Floyd M. Crandall, Secretary, and Dr. Alexander Lambert, Treasurer. The place was crowded to its capacity. The address of welcome was by Hon. John Purroy Mitchel, Mayor of New York.

An address was delivered by Hon. Dudley Field Malone and George E. Vincent.

Dr. Lambert then introduced Col. Theodore Roosevelt. He started his remarks by saying, "I am here tonight to speak to you but wish it was so that you could not hear my voice." Once or twice he turned to Dr. Lambert and said something to him telling the audience this is about the only chance I get to bull Dr. Lambert, you know he is my family physician and generally I get it from him. He spoke about the Liberty Loan and preparedness. He said we were always too anxious to say we belong to a big nation and rest there. Tonight we are not hearing what France and England are going to do but what they have done. The time has passed for us to talk, we should act now and let others talk about it. He spoke about the noble work the American doctors were doing on the other side and he felt sure there would be more doctors volunteering than were needed. He spoke of the duties of the farmer to his country.

He ended his remarks with his characteristic smile and hearty welcome to the doctors of the American Medical Association.

Madame Frances Alda assisted by the Metropolitan Opera Chorus sang the Star Spangled Banner, and may it always live. This then brought the rally to a close.

Having had the pleasure of attending the International Cong-

ress of Medicine in London, in August, 1912 and comparing the meeting of the American Medical Association, I would conclude that as far as original papers, attendance and knowledge gained, the latter has certainly been of decided interest and benefit to me and I think more of us should strive to attend these meetings and have a larger representation from the metropolis of the South.

VACCIN TREATMENT OF WHOOPING COUGH.*

(Additional Observations.)

By CHARLES J. BLOOM, B. Sc., M. D., New Orleans.

This article is written with the hope of attempting to alter erroneous impressions, faulty conclusions, and mis-applied therapy in the treatment of this important disease.

Unfortunately for both concerned, the physician and the patient consider the question of pertussis as trivial—the former prescribes negatively and creates in the mind of the latter a false delusion, namely that whooping cough cures itself and does not respond to active treatment.

The results of this false premise are best told in statistics compiled by the Board of Health of New Orleans.

Chart No. 1.

COMMUNICABLE DISEASES.

NUMBER OF CASES.

	1910.	1911.	1912.	1913.	1914.	1915.	1916.
Diphtheria.	608	386	1072	1249	1679	1833	....
Scarlatina.	992	594	352	137	147	70	100
Smallpox.	537	207	212	31	21	72	193
Typhoid fever.	405	441	261	206	312	234	374
Measles.	2556	2347	324	4657	677	353	3191
Whooping cough.	*	*	83	109	278	177	141

*Not reportable.

Chart No. 2.

COMMUNICABLE DISEASES.

NUMBER AND PER CENT OF DEATHS.

	1910.	1911.	1912.	1913.	1914.	1915.	1916.
Diphtheria.	37—6%	25—6.4%	58—5.4%	112—8.9%	112—6.7%	112—6.1%	....
Scarlatina.	23—3%	4—.6%	9—2.5%	2—1.4%	2—1.3%	2—2.3%	1—.1%
Smallpox.	2—4%	2—.9%	0—.0%	2—6.4%	0—.0%	5—6.9%	4—.2%
Typhoid fever.	107—26%	106—24%	49—18%	60—28%	78—21%	79—33%	87—20%
Measles.	72—2.8%	40—1.7%	2—.6%	36—.7%	8—1.0%	3—.8%	12—.3%
Whooping cough.	*	*	6—5.5%	12—11%	16—5.7%	19—10%	12—8.4%
Average five years.					8.1%		

* Not reportable.

DEATHS FROM PROMINENT CAUSES—1884-1913—NEW ORLEANS.

Years.	Smallpox	Diphtheria and Croup	Typhoid Fever	Whooping Cough	Measles	Scarlet Fever
1884.	292	155	56	46	149	27
1885.	1	230	38	42	29	42
1886. . . . .	...	145	30	14	1	5
1887. . . . .	...	226	34	11	19	1
1888. . . . .	...	355	46	59	2	9
1889. . . . .	...	171	41	13	20	5
1890. . . . .	...	136	50	26	37	5
1891. . . . .	...	109	59	9	49	3
1892. . . . .	...	116	51	29	7	1
1893. . . . .	...	126	39	20	1	1
1894.	2	158	76	28	5	1
1895.	56	99	113	22	57	5
1896.	238	53	90	32	10	1
1897.	1	45	141	2	1	1
1898. . . . .	...	15	184	45	...	1
1899.	6	19	155	20	17	3
1900.	448	36	114	8	57	19
1901.	52	41	141	22	1	62
1902.	4	44	135	14	1	14
1903.	4	35	119	27	2	8
1904. . . . .	...	45	111	12	33	2
1905.	6	42	101	34	...	8
1906.	8	46	95	20	4	14
1907.	10	37	179	51	71	4
1908.	9	48	108	30	14	25
1909. . . . .	...	25	96	17	2	62
1910.	2	38	107	17	72	28
1911.	2	25	106	112	40	4
1912. . . . .	...	58	49	8	2	10
1913.	2	112	60	12	36	2
	1143	2790	2724	802	739	373

A careful study of these data will evidence several important facts, namely:

1. In twenty-eight years, eight hundred and fifty-five children have died from whooping cough.

2. During the past five years the mortality has averaged 8.1 per cent.

3. The death rate from whooping cough during the past five years has been two per cent greater than diphtheria, seven per cent greater than measles and six per cent greater than scarlatina.

4. In actual number of deaths the mortality from whooping cough for twenty-five years as compared with measles, 802-739; as compared with scarlatina, 802-373.

These conclusions should be most convincing to those whose ideas are fixed, and at the same time have the individuality of not responding to a progressive medicine environment.

In the way of an introductory statement, the writer brought to the attention of this society the beneficial results obtained from said treatment in June, 1916.

It is understood that no one is claiming that vaccin therapy is a panacea for the cure of all cases; but the evidences obtained during a period of thirty months should be interesting to say the least.

This series consists of forty cases, thirty treated with the vaccin for active cases, six with the vaccin in the way of prophylaxis and four with the whooping cough phylacogen.

Twenty-six additional cases were treated but the necessary statistics were wanting, causing me to omit same from this paper.

REACTION.

With the administration of large doses for active cases there was a rise in temperature as high as 101° for the first two or three doses in 4 per cent of the cases; in the cases treated with whooping cough phylacogen each one experienced a rise of temperature after the individual injections were given.

Another point of interest, on the same night when the vaccines were given the patients would be somewhat more restless than previously and practically every case would register additional coughing spells than the night before, but after one week these two factors would be negative.

Vaccin.

The mixed vaccins employed in the first fifteen cases were on the following basis:

Bordet-Gengou bacilli.	50,000,000
Staphylococci pyogenes aureus	10,000,000
Micrococci catarrhalis.	20,000,000
Bacilli Influenzæ.	20,000,000
Streptococci pyogenes.	20,000,000

The quantities used in this series, and number of injections, are as follows:

Case.	Amount Mixed Vaccin equals	Number of injections equals	
No. 1.	500,000,000	5	Minimum dose, 120,000,000 Maximum dose, 240,000,000
No. 2.	660,000,000	" "	
No. 3.	624,000,000	" "	
No. 4.	1,268,000,000	" "	
No. 5.	596,000,000	" "	
No. 6.	540,000,000	" "	
No. 7.	500,000,000	" "	
No. 8.	900,000,000	" "	
No. 9.	974,000,000	" "	
No. 10.	766,000,000	" "	
No. 11.	761,000,000	" "	
No. 12.	602,000,000	" "	
No. 13.	750,000,000	" "	
No. 14.	870,000,000	" "	
No. 15.	1,050,000,000	" "	
Average	760,000,000	" "	8

The mixed vaccins employed in the second fifteen cases were on the following basis:

Bact. pertussis.	1,000,000,000
Staphylococcus pyogenes aureus	500,000,000
Streptococcus pyogenes	100,000,000
Micrococcus catarrhalis.	40,000,000
Bact. influenzae (Pfeiffer)	160,000,000

The quantities used in this series, and number of injections, are as follows:

Active Doses.

Amount Vaccin.	Dose		Number of Doses.	Type of Vaccin.
	Minimum.	Maximum.		
Case No. 16....21,800,000,000	1,800 million.	3,600 million	6	Mixed
Case No. 17....21,800,000,000	1,800 million.	3,600 million	6	Mixed
Case No. 18....17,600,000,000	2,000 million.	4,000 million	5	Mixed
Case No. 19....13,320,000,000	2,000 million.	2,000 million	8	Simple
Case No. 20....25,000,000,000	1,000 million.	4,000 million	8	Mixed
Case No. 21....1,600,000,000	120 million.	400 million	4	Simple
Case No. 22....2,300,000,000	200 million.	400 million	7	Simple
Case No. 23....4,200,000,000	200 million.	2,000 million	8	Simple
Case No. 24....10,000,000,000	2,000 million.	2,000 million	5	Simple
Case No. 25....26,000,000,000	1,000 million.	4,000 million	10	Simple
Case No. 26....5,000,000,000	1,000 million.	4,000 million	3	Simple
Case No. 27....22,950,000,000	2,000 million.	4,000 million	7	Mixed
Case No. 28....11,100,000,000	400 million.	3,600 million	4	Mixed
Case No. 29....7,300,000,000	500 million.	2,000 million	5	Mixed
Case No. 30....14,200,000,000	3,800 million.	3,800 million	4	Mixed

CASES NOS. 31, 32, 33, 34, 35, 36—PROPHYLACTIC DOSES.

First dose. Mixed Vaccin.....	1,900,000,000
Second dose. Mixed Vaccin.	3,800,000,000
Third dose. Mixed Vaccin.....	3,800,000,000

CASES NOS. 37, 38, 39, 40—WHOOPIING COUGH—PHYLACOGEN—ACTIVE DOSES.

First dose.	½	c. c.
Second dose.	1	c. c.
Third dose.	1½	c. c.
Fourth dose.	2	c. c.
Fifth dose, etc.	2½	c. c.

RECAPITULATION—TREATMENT.

	First 15 Cases.	Second 15 Cases.	Total.
1. Active.....			
{ Mixed.....	15	8	23 Cases
{ Simple.....	0	7	7 Cases
	15	15	30 Cases
2. Average number of doses.....	First 15 Cases. 8	Second 15 Cases. 6	Average 7 Doses

ACTIVE TREATMENT.

1. Better results obtained by mixed vaccins than by simple vaccins.

In this regard, Bordet and Gergan to whom we owe our present mode of treatment could not recover from the secretion of children suffering from whooping cough the specific organism after the spasmodic stage was evidenced, showing therefore, the possibility of more than one organism as the bacteriological factor in this clinical entity.

2. Use large initial dose, not less than 1,000,000,000 (except in children under 12 months or whooping cough complicated by other conditions, then 500,000,000) and increase from 1,000,000,-

000 to 1,800,000,000 per dose, the maximum quantity being 4,000,000,000 in my series, up to 5,000,000,000.

3. Intervals being every other day until one of the symptoms showed marked remissions, then twice each week until cured.

4. Despite the fact that some of our confreres have succeeded in using four doses of the vaccin, then discharging patient, the same has not been my good fortune, for the entire series the average number of doses have been seven.

PROPHYLACTIC TREATMENT.

1. In six cases no evidences of whooping cough.

2. Give large doses, particularly if the patient is in the same home with the active case, namely 1,800,000,000, up to 3,800,000,000.

Dr. H. L. K. Shaw, in the July issue of *The American Journal of Obstetrics*, reports that the number of whooping cough cases in institutions for children in the state of New York have diminished from 40 per cent to 7 per cent where the vaccins have been employed in a prophylactic way.

PHYLACOGEN TREATMENT ACTIVE.

The writer has never favored phylacogen for the reason that in the past, their demonstration in different cases (gonorrheal arthritis and typhoid) were very discouraging.

However in the presence of the graduate students of the New Orleans Polyclinic, four cases severe in character were treated and all discharged within a period of two weeks, the initial quantity being $\frac{1}{2}$ c. c. increasing $\frac{1}{2}$ c. c. every other day, the maximum quantity given was $2\frac{1}{2}$ c. c.; each case averaged about five doses.

Of course this is not conclusive but opens a new method of treatment.

MORTALITY. Everyone of the fifty-six cases treated, including the forty herein described recovered from whooping cough. Compare this with the 8.1 per cent and 11 per cent mortality of New Orleans and Philadelphia, then determine your status concerning the vaccin therapy.

CONTRAINDICATIONS.

1. Cases suffering from Bronchial Asthma or Congenital Lues do not respond readily, particularly the former.

2. After the patient has passed the catarrhal stage and the

spasmodic stage is marked the vaccin will not lessen the period of the disease but will lessen the intensity of the attacks.

Age.

	First Series.	Second Series.	Total.
Under 1 year.	3	2	5
Under 2 years.	1	4	5
Between 2 and 5 years.	6	5	11
Between 5 and 9 years.	5	4	9
			<hr/> 30 Cases

Marked Cases.

Case No. 19. Complicated by congenital lues. Showed fair reaction, but duration was not diminished markedly.

Case No. 20. Complicated by acidosis. Reacted quickly.

Case No. 21. "Vomited everything she eat." Splendid result.

Case No. 22. Brought to office on pillow.

Case No. 25. Referred by Dr. Louis Levy. Became unconscious with each coughing spell."

Case No. 25. "Has had whooping cough for five weeks; unable to stand it any longer. Has lost about seven pounds.

Case No. 27. Referred to Dr. Wm. Kohlmann. "Unable to count the coughs."

Case No. 28. "Unable to retain any food whatsoever, and has not slept since the whooping cough started."

Duration.

Case	TREATMENT		Total.	Case.	TREATMENT		Total.
	Before.	After			Before.	After	
No. 1.	5 days plus	18 days	23 days	No. 16.	6 days plus	13 days	19 days
No. 2.	6 days plus	28 days	34 days	No. 17.	7 days plus	13 days	20 days
No. 3.	5 days plus	28 days	32 days	No. 18.	4 days plus	11 days	15 days
No. 4.	7 days plus	24 days	31 days	No. 19 Syphilis	5 days plus	17 days	22 days
No. 5.	42 days plus	22 days	64 days	No. 20 Acidosis	7 days plus	21 days	28 days
No. 6.	1 day plus	26 days	27 days	No. 21.	2 days plus	24 days	26 days
No. 7.	7 days plus	13 days	20 days	No. 22.	*14 days plus	14 days	28 days
No. 8.	14 days plus	11 days	25 days	No. 23.	*14 days plus	20 days	34 days
No. 9.	1 day plus	28 days	29 days	No. 24.	*14 days plus	11 days	25 days
No. 10.	35 days plus	23 days	58 days	No. 25.	*35 days plus	19 days	54 days
No. 11.	14 days plus	32 days	46 days	No. 26.	*21 days plus	7 days	28 days
No. 12.	7 days plus	18 days	25 days	No. 27.	4 days plus	12 days	16 days
No. 13.	8 days plus	13 days	21 days	No. 28.	3 days plus	20 days	16 days
No. 14.	2 days plus	41 days	43 days	No. 29.	7 days plus	12 days	19 days
No. 15.	1 day plus	31 days	32 days	No. 30.	14 days plus	7 days	21 days
Average.	10 days plus	23 days	33 days	Average.	10 days plus	15 days	25 days

*Omitting Cases Nos. 22, 23, 24, 25, 26, having had pertussis over two weeks.

Average. 6 days plus 15 days 21 days

RECAPITULATION.

First Series.	6 days plus	22 days	28 days
Second Series.	6 days plus	15 days	21 days
Average.	6 days plus	18 days	24 days

Omitting Cases Nos. 5, 10, 14, the first two having had the infection at least five weeks previous to treatment and the latter case complicated, the average duration was:

TREATMENT		Total.
Before.	After.	
6 days plus	22 days.	28 days

Authorities such as Holt, Rotch, Cuntley, Garrod, Batten, Thursfield and Ruhrah estimate the duration of this disease, re-

spectively, 61 days, 90 days, 120 days, 30-90 days, 49-148 days, and 90-180 days.

Symptoms.

First Series (15 Cases).

(a) Weight.

13 Cases weighed. Six (6) cases gained average of $6\frac{1}{3}\bar{3}$.

Seven (7) cases lost average of $21\frac{5}{7}\bar{3}$.

Average lost, 13 cases, $14\bar{3}$.

Second Series. (15 Cases).

Case No. 16 (not weighed)

Case No. 17 (not weighed)

Case No. 18 (not weighed)

	At Start.	At Discharge.	Gain.	Loss.
Case No. 19.....	16 lbs. $11\bar{3}$	15 lbs. $10\bar{5}$		— $17\bar{3}$
Case No. 20.....	29 lbs.	27 lbs.		— $32\bar{3}$
Case No. 21.....	31 lbs. $8\bar{3}$	32 lbs.	+ $8\bar{3}$	
Case No. 22.....	14 lbs. $10\bar{5}$	15 lbs. $3\bar{3}$	+ $9\bar{3}$	
Case No. 23.....	31 lbs. $4\bar{5}$	31 lbs.		— $4\bar{3}$
Case No. 24.....	20 lbs. $8\bar{3}$	21 lbs. $12\bar{3}$	+ $16\bar{5}$	
Case No. 25.....	18 lbs. $4\bar{5}$	21 lbs.	+ $44\bar{3}$	
Case No. 26.....	36 lbs.	36 lbs. $12\bar{3}$	+ $12\bar{3}$	
Case No. 27.....	49 lbs.	49 lbs.	Stationary	
Case No. 28.....	14 lbs. $8\bar{5}$	13 lbs. $10\bar{5}$		$14\bar{3}$
Case No. 29.....	35 lbs.	37 lbs. $4\bar{5}$	+ $36\bar{3}$	
Case No. 30 (not weighed)				

Six (6) cases gained average $20\bar{3}$

Four (4) cases lost average $16\bar{3}$.

One (1) case remained stationary.

Average gain in 11 cases, $5\bar{3}$.

Average lost in twenty-four cases weighed was $9\frac{1}{2}\bar{3}$.

(b) Cough. (c) Vomiting.

After two or three injections have been given, marked diminution in the intensity and number of coughs and the practical eradication of the disagreeable vomiting factor.

(d) Complications.

Up to this writing I have not as yet seen any one of the series with a complication or sequelæ as the aftermath of this condition.

BLOOD MANIFESTATIONS.

Case.	Age.	Date.	Total White Cell Count.	Endothelial Leucocytes. Pct.	Lymph. Pct.	Eosinophiles Lymphocytes. Pct.	Neutrophiles. Pct.	No. of Vaccin Injections.
No. 9.	$2\frac{1}{2}$ mos.....	6/29/15	60,500	9	66	..	25	..
		7/ 8/15	8,150	5	56	..	39	4
		7/14/15	3,700	16	13	1	70	x2
		7/29/15	16,250	4	34	4	58	x4
No. 10.	3 yrs.....	7/10/15	18,800	3	57	3	37	2
		7/12/15	6,500	12	6	2	80	x3
		7/22/15	27,000	8	25	12	55	x3
		7/29/15	22,500	2	45	13	30	x2
No. 11.	3 yrs.....	7/ 8/15	13,500	6	53	4	37	..
		7/13/15	3,400	13	35	2	50	x2
		7/20/15	43,000	8	44	9	39	x3
		6/24/15	13,540	9	45	7	39	..
No. 12.	3 yrs.....	7/ 6/15	43,600	7	36	10	47	x3
		7/13/15	4,500	4	30	1	65	x3
		8/ 3/15	25,500	8	41	6	45	2
No. 15.	4 yrs.....							
No. 23.	4 yrs.....		13,950	..	73	7	20	x1
No. 28.	5 mos.....		24,000	..	90	3	7	x1

CONCLUSIONS.

Before Vaccin. (a) Marked leucotysis at onset of pertussis (13,540—60,500). (b) Significant lymphocytosis at onset of pertussis (41 per cent—66 per cent.) (c) Marked eosinophilia (0—12 per cent).

After Vaccin. (a) Marked leucopenia (3400—8,100), with decrease in number of lymphocytes and increase in the neutrophils. (b) In third stage of pertussis, moderate leucocytosis with normal differential count.

CONCLUSIONS AND SUMMARY.

1. The treatment of pertussis (whooping cough) by vaccin therapy is rational and efficient.

2. Experience has taught that large initial (500,000,000-1,000,000,000) with subsequent large doses are fruitful of better and quicker results.

3. The vaccin therapy has proven the better treatment because

a. Slight reaction.

b. Duration averages only 24 days.

c. The loss of weight is unappreciable, 9½%.

d. The intensity and number of coughing spells become less after seven days.

e. Vomiting ceases after 1-2 weeks.

f. No complications* in forty cases, the first series now exceeding twelve months duration.

h. Mortality is 0 per cent.

4. The vaccin should be used extensively as a prophylactic means as it has reduced institutional whooping cough from 40 per cent to 7 per cent.

* Complications: Pneumonia, pyelitis and tuberculosis.

NOTICE TO CONTRIBUTORS.

Following the practice of other leading Medical Journals, we have established the rule of omitting all titles of contributors other than the college or scientific degrees held by them and we are confident our contributors and readers will appreciate this scientific and academic step as good editorial policy.

PROCEEDINGS OF THE AMERICAN SOCIETY OF TROPICAL MEDICINE

OBSERVATIONS ON LEISHMANIASIS AND PSEUDO- LEISHMANIASIS OF THE AMAZON BASIN.

By ERNEST LINWOOD WALKER, M. D.
San Francisco, Cal.

(From the George Williams Hooper Foundation for Medical Research, University of California.)¹

There exists in many regions of Tropical America a tegumentary leishmaniasis which resembles to a certain extent Oriental sore, but which is characterized by the frequent involvement of the mucosa of the nose and pharynx. These naso-pharyngeal lesions are generally considered to be secondary to the cutaneous infection, are progressive, and usually lead to a fatal termination. This disease has been known by various names in different regions, such as *bouba*, *bouton de Bahia* or *ulcère de Bauru* in Brazil, *buba* in Paraguay, *espundia* in Bolivia, *uta* in Peru, forest yaws in the Guianas, and *ulcère de Torreaba* in Columbia. These names have undoubtedly included tegumentary lesions of various etiologies.

A typical case of South American leishmaniasis has briefly the following clinical history. The patient usually gives a history of having been bitten by some arthropod (fly or tick) on some uncovered part of the body a short time previous to the development of the primary lesion. At the site of this bite there appear one or several erythematous and perigenous spots, which develop into vesicles that are at first clear but become purulent two or three days later. These pustules may break down to form an ulcer, or dry up and become frambæsiiform lesions, or develop into papillomata. During the evolution of this cutaneous lesion there may be an elevation of temperature, and the neighboring lymphatic glands may become enlarged and painful. The primary sore may be single or multiple, and is usually located on the arms, legs or face, but occasionally on the trunk. It runs a chronic course, may become of considerable size, but after six months or more heals by cicatrization. After the cutaneous sore has healed, or sometimes before, the mucosal lesions develop. These lesions frequently begin in the

1. Observations made at the hospital of the Madeira-Marmore Railway Co., at Porto Velho, Amazonas, Brazil.

nose, usually on the lower part of the septum, and are associated with a coryza and a sense of nasal obstruction. The mucosa becomes tumid and hyperemic; the initial lesion progressing becomes a crusty, granulomatous, or ulcerative sore, which is at first limited to the mucosa. After a time the underlying tissues including the cartilage of the nasal septum may be attacked and destroyed, producing a disfiguring mutilation. The lesions may spread to the nasal fossæ, the palate, tonsils, pharynx, cheeks, tongue, and even to the esophagus and larynx. The hard palate may be perforated, the patients become aphonus, and suffer difficulty and pain during deglutition. The course of these lesions are very chronic, sometimes extending over a period of 20 to 30 years. There is frequently a terminal cachexia, and death finally occurs from exhaustion or from intercurrent disease.

A considerable number of cases having a clinical history corresponding more or less closely with the above description were encountered in the upper Madeira valley, Brazil, some of them being of local development and others coming from other parts of the Amazon basin. In the light of the parasitological findings and reaction of these patients to treatment these cases are of interest. The following 12 cases are the only ones of which records were kept, although many others were examined, because at the time the significance of the parasitologically negative cases was not realized. The essential facts of these cases are given in Table I.

In only two of these cases (Nos. 8 and 9) could a clinical diagnosis of leishmaniasis be confirmed by the discovery of the specific parasites in the lesions. Both of these were cutaneous cases of the ulcerative type, without naso-pharyngeal lesions (Figs. 1 and 2). Case 9 is remarkable for the extent of the cutaneous sore on his right calf. The patient also had a second small leishmanial sore on the lower posterior part of the right thigh. The sores in both cases were characterized by the restriction of the pathologic process to the cutaneous tissues, the absence of pus and the raised borders. In case 8 there was an area of papillomatous infiltration, surrounding the open sore. *Leishmania* could be demonstrated microscopically in material taken from any part of the edge, but not the fundus, of these sores at any time previous to treatment with tartar emetic. Both cases received intravenous injections of tartar emetic and were improving when I left Brazil. One other case (No. 6) undoubtedly had been leishmaniasis, since it had been

TABLE I.—Cases of Leishmaniasis and Pseudo-Leishmaniasis.

Case No.	PATIENT.		Locality Disease Contracted.	How Contracted.	CUTANEOUS LESIONS.		NASO-PHARYNGEAL LESIONS.		Microscopical Examination for <i>Leishmania</i> .	REACTION TO TREATMENT.	
	Nationality.	Sex. Age.			Location.	Duration.	Present Condition.	Location.		Tartar Emetic	Anti-syphilitic.
*1	Brazilian . . .	M. 25	Rio Madeira	Bite of "pium"	Hand	1 year	Healed	Nose	Negative	?	(See remarks)
2	Portuguese. . .	M. 26	Rio Madeira	Bite of tick	Ear and wrist	2½ years	Active	.....	Negative	.....	Positive
3	Brazilian . . .	M. —	Territory of Acre	.....	Wrist	10 years	Healed	Nose	Negative	.....	.....
4	Brazilian . . .	M. —	Amazonas	.....	Hand	2 years	Healed	Nose	Negative	.....	Positive
5	Peruvian . . .	M. 28	Peru	Bite of fly	Ankles	4 years	Healed	Nose	Negative	.....	Positive
†6	Peruvian . . .	M. 28	Peru	Bite of "pium"	Ankle	10 years	Healed	Nose	Leishmania (See remarks)	Positive	.....
7	Brazilian . . .	M. 20	Amazonas	.....	Ankle	3 years	Healed	Nose	Negative	.....	Positive
8	Barbadian . . .	M. 26	Rio Madeira	.....	Forearm	5 weeks	Active	.....	Negative	.....	.....
9	Brazilian . . .	M. 25	Rio Madeira	"Scratch of stick"	Calf and thigh	2½ months	Active	.....	<i>Leishmania</i>	Positive	.....
10	Brazilian . . .	M. 27	Rio Madeira	Bite of "pium"	Ankle and hand	2 2/3 years	Healed	Nose	<i>Leishmania</i>	Positive	.....
11	Brazilian . . .	M. 45	Rio Madeira	Wound by spine of bamboo	Ear and ankle	4 years	Healed	Nose & pharynx	Negative	.....	Positive
‡12	Brazilian . . .	M. 24	Rio Madeira	Bite of borraashuda	Epigastrium	1 year	Active	.....	Negative	.....	.....

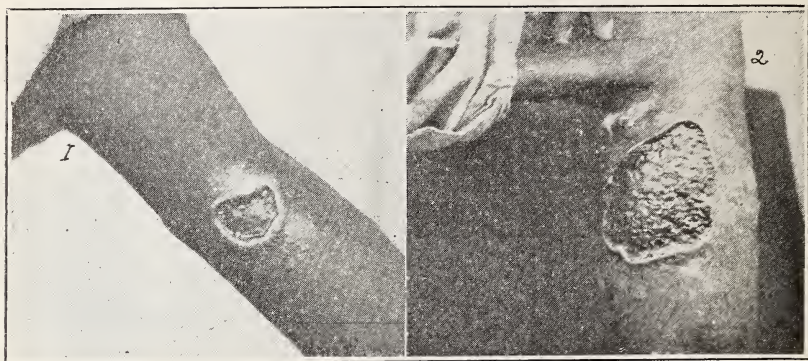
REMARKS.

* Patient reported that he felt better after tartar emetic; objectively no improvement could be observed.

† A case of healed leishmaniasis, diagnosed and treated by Dr. Thomas, of the Observation Laboratory of the Liverpool School of Tropical Medicine at Menose.

‡ Frankoesiform lesion.

diagnosed and treated by Dr. H. W. Thomas of the Observation Laboratory of the Liverpool School of Tropical Medicine at Manaus, but was healed when it came under my observation.



EXPLANATION OF PLATE.

Fig. 1. Leishmanial lesion on the forearm of Case 8. Note the limitation of the sore to the cutaneous tissues, the raised edge and the area of papillomata surrounding the ulcer.

Fig. 2. Leishmanial lesion on the calf of Case 9. Note the extent of the sore, the limitation of the ulcer to the cutaneous tissues, and the raised edge of the lesion.

In the other nine, or 75 per cent of the cases, although the history and symptomatology corresponded closely enough to South American tegumentary leishmaniasis to justify a clinical diagnosis, and indeed many of them had been so diagnosed by physicians, *Leishmania* could not be found. In every case examination was made of material scraped from several different places at the edge of the sore and from the different sores when more than one existed, and in many of these cases repeated examinations were made, all with negative results. In consequence of these consistently negative parasitological findings and the reaction of many of these cases to treatment, I am convinced that these cases were not leishmaniasis but were what I have designated for convenience, because of their clinical similarity, as pseudo-leishmaniasis.

On account of the manifold variety of cutaneous and mucosal lesions presented by South American leishmaniasis it may resemble clinically many other diseases of the skin and mucosa. It has been confused with syphilis, yaws, lupus, cancer, sporotrichosis and blastomycosis. Splendore (1911) and Escomel (1915) have called attention to the occurrence in Brazil and in Peru and Bolivia respectively of a blastomycosis which presents ulcerations and framboesia-like vegetations of the cutaneous and mucosal surfaces which require very careful clinical examination to distinguish from leish-

maniasis. Migone (1915) states that in Paraguay, as well as in all other countries where *buba* exists, the malady has been considered identical with syphilis, but of a kind not at all amenable to ordinary specific treatment.

Of my parasitologically negative cases, case 12 might from its appearance have been a dermatomycosis, although no evidence of such an etiology could be found. Cases of evident *ulcus tropicum* have been purposely excluded from the list in table 1. The lesions in most if not all of the remainder were probably of syphilitic origin. Probably in no region in the world is syphilis more prevalent than in the Amazon basin. At the Candelaria Hospital, Porto Velho, it is estimated that 80 per cent of the patients admitted are syphilitic. Many authors working in the Tropics have called attention to the comparative rarity or absence of involvement of the central nervous system and the frequency and severity of skin lesions in the late stage of syphilis in the natives of Tropical countries (Phlen, 1914). Furthermore, the prompt reaction of many of these cases to specific anti-syphilitic treatment makes the diagnosis reasonably sure.

It is to be regretted that facilities were not available for studying the Wassermann reaction of these patients.

It has usually been assumed (Escomel, 1911; Mayer, 1913; Monge, 1914) that the cutaneous sore, the "*espundial chancre*" of Escomel, invariably precedes the mucosal lesion in South American leishmaniasis, and that at least temporary general infection occurs some time during the development of the cutaneous sore and preceding the localization of the infection in the naso-pharyngeal mucosa. There is, however, no parasitological evidence of a general infection. *Leishmania* have never been found in the blood or internal organs of these cases (Migone, 1913; Thomas, 1916). The occasional elevation of temperature and the enlarged and painful lymphatic glands in the neighborhood of the cutaneous sore, which have been considered as supporting the theory of a general infection, are probably due to secondary pyogenic infections of the cutaneous sore. Furthermore cases of cutaneous leishmaniasis without subsequent mucosal involvement and mucosal leishmaniasis without preceding cutaneous lesions are now known to be of not infrequent occurrence in South America (Splendore, 1911; d'Ultra e Silva, 1915). D'Ultra e Silva states that among his cases only about 75 per cent had both cutaneous and mucosal infections.

Auto-inoculation has been advanced by Carini (1911) and d'Ultr e Silva (1915) as an explanation of the mucosal involvement. According to this conception the patient by scratching the cutaneous lesion and then picking his nose inoculates the nasal mucosa. That such auto-inoculation is possible and may sometimes occur cannot be denied; but if this be a sufficient explanation of the frequency of such mucosal involvement in South American leishmaniasis, then one would expect to find mucosal involvement equally common in the cutaneous leishmaniasis of the Orient. It is true that Cadamatis and Melissidis (1911), La Cava (1913), Castellani (1913) and Christophers (1914) have reported single cases of mucosal involvement in Oriental sore in Crete, Italy and Sicily, India and Anglo-Egyptian Sudan respectively, but such complications are extremely rare in the Orient, while they are the rule in South America.

The true explanation of the frequent mucosal involvement in South American leishmaniasis probably lies in the species of insect and its habits which transmits the disease in this region. I believe that the cutaneous and mucosal lesions represent separate inoculations of the parasite by a biting insect which not only attacks the exposed cutaneous surfaces but which also has a predilection for the face, nose, and mouth; whereby its bites, or by being crushed and its remains scratched into the nostrils, or by being crushed in the mouth, infect the nasal or buccal mucosa. This is the only theory which would explain the great prevalence of mucosal lesions in the absence of a generalized infection, the not infrequent primary mucosal lesions, and the frequent long interval between the supposed primary cutaneous sore and the development of the mucosal lesion. As an example of this latter condition, in case 6, which had been an undoubted case of nasal leishmaniasis, the cutaneous sore preceded the lesion in the nose by 5 years. That the infection had remained latent in this patient for this time and then reappeared in the nasal mucosa does not seem probable. Moreover, when a cutaneous ulcer does precede a leishmanial lesion of the mucosa, there is frequently no evidence that the former was of the same etiology because the cutaneous sore has healed; and it would be difficult to find a native in the Amazon basin who cannot show one or more scars of healed cutaneous ulcers.

The mucosal lesions of South American leishmaniasis are sup-

posed furthermore to differ from the cutaneous lesions of both the Oriental and the Occidental disease in the tissues involved and in their course. The skin lesions of both regions are restricted to the cutaneous tissues, and they are self-limiting, the sore healing spontaneously after running a course of some months. On the other hand, the mucosal lesions of the South American disease are supposed to attack not only the mucosa but to destroy the underlying tissues including cartilage; and they are progressive, the lesions never healing spontaneously. That the moist mucosa and surfaces may be a more favorable tissue than the skin for the multiplication of the parasite and the perpetuation and spread of the lesion seems possible; but that the parasite should change its cellular habitat and its pathogenic properties, when transplanted to the mucosa, so that it attacks tissues other than the tegumentary, even cartilage, does not seem probable. Laveran and Nattan-Larrier (1912), who studied in sections the histology of the mucosal lesions, found the parasites restricted to the mucosal tissues, and almost exclusively in the superficial and median parts of the thickened corium at the borders of the ulceration. I am of the opinion that the extensive destruction of the deeper tissues frequently seen in old cases is due to a secondary infection, and that this secondary infection is frequently syphilitic. The *Leishmania* infection probably serves to localize the secondary infection in the naso-pharyngeal mucosa, and by extending the mucosal lesion aid in the spread of the process which destroys the underlying tissues. Da Matta (1915) believes that naso-pharyngeal leishmaniasis can be distinguished from syphilitic ulceration of these localities by the fact that the former never attacks the bones of the nose. I believe that we can go farther and say that uncomplicated South American leishmaniasis never attacks anything but the tegumentary tissues.

The method by which man becomes infected with the several leishmaniasis is one of the most puzzling problems of tropical epidemiology. The preponderance of evidence now available indicates that they are all transmitted by some blood-sucking arthropod; but by what specific arthropod, whether as human parasites by an alternative host or as strayed arthropod parasites (Fantham, 1915), and whether by inoculation or by the contaminative method, remains still to be proved. In South America the natives frequently accuse a tick or a blood-sucking fly. Investigators working in different regions have incriminated various arthropods, and

it is possible that the disease has different vectors in different parts of Tropical America.

With reference to my cases it is interesting that the majority of the cases of pseudo-leishmaniasis attributed their lesions to the bite of some arthropod; while of the cases of true leishmaniasis, one (case 8) professed ignorance of the origin of his sore. Case 9 stated that the lesion started from the scratch of a stick, and Case 6 (healed) incriminated the "*pium*." One patient (Case 12) killed the fly, in the act of biting him at the site and just before the development of the lesion, and identified it by the native name of "*borrashuda*." This information might have been of epidemiological value, but unfortunately *Leishmania* were not found in his lesion.

The epidemiological probabilities concerning the transmission of leishmaniasis in the Amazon basin, based upon the available date, may be summarized as follows:

1. The vector is probably some blood-sucking arthropod, because (a) the lesions usually start in the otherwise intact skin, (b) the parasites are incapable of surviving on the surface of the skin or of penetrating the sound epidermis, and (c) the lesions are usually known to start from the bite of an arthropod.

2. This arthropod must have a forest habitat, because the disease is almost if not quite exclusively one of wooded regions.

3. The arthropod must be one biting only exposed parts of the body, because the lesions are almost wholly restricted to such locations.

4. It is probably a very prevalent arthropod, because (a) man like other mammals is probably relatively insusceptible and (b) presumably only a small proportion of the arthropoda are infected.

5. It is probably a small arthropod, because (a) it and its bites are frequently unnoticed and (b) the infection of man very probably takes place contaminatively by crushing the vector and scratching the remains into the wound on the skin or by simply crushing it on the mucosal surfaces.

6. The arthropod must have a predilection for the nose and mouth, because mucosal infections are very common.

7. The arthropod is probably not only a blood-sucker but one which has a predilection for scratches and wounds, because leishmanial sores sometimes originate at such location.

These conditions tend to exclude from epidemiological consid-

eration body parasites and household insects such as lice, fleas, bed bugs and house flies; the larger forest arthropods, such as the ticks and tabanid flies; and to a lesser extent the mosquitoes.

The insects in the Amazon basin which best satisfy these conditions are the "*piums*." *Pium* is the native name for minute blood-sucking flies which belong chiefly to the genus *Simulium*, but which also includes flies of the genus *Ceratopogon*. These flies breed in water in the forest and are extraordinarily prevalent in many parts of the Amazon basin. They attack man in vast swarms over all exposed parts of the body including the face and enter the nostrils and mouth. They also have a predilection for scratches and wounds. The tormented individual, in attempts to free himself from their attacks, crushes large numbers of these pests on his skin and in his nose and mouth and scratches their remains into the itching wounds. After a day's exposure to the attacks of these flies the face and other exposed parts of the body often present an appearance as if the person were suffering from some eruptive disease. Unfortunately my attention was directed to these flies as the possible vectors of leishmaniasis only shortly before my departure from Brazil. In consequence of this and of an unprecedented dry season which had greatly diminished the number of these flies, an experimental investigation of the possible role which the *piums* play in the transmission of leishmaniasis could not be carried to a definite conclusion; but I am of the opinion that in any epidemiological investigation of this disease in the Amazon basin the flies of these two genera, especially of *Simulium*, should receive careful consideration.

SUMMARY.

1. Tegumentary leishmaniasis is wide-spread in the Amazon basin, but is probably less prevalent than clinical observation would indicate.

2. Cutaneous-mucosal lesions clinically similar to tegumentary leishmaniasis, but in which the specific parasites, *Leishmania*, cannot be found, are very common and are frequently mistaken for that disease. Many of these pseudo-leishmanial lesions are of syphilitic origin.

3. The mucosal lesions of South American leishmaniasis, which have been generally considered to be a secondary manifestation of a primary cutaneous infection, probably represent a distinct primary infection.

4. The extensive destruction of sub-mucosal tissues including cartilage, frequently observed in old naso-pharyngeal lesions of South American leishmaniasis, are probably not due to *Leishmania* but to a secondary infection which is frequently syphilitic.

5. Minute blood-sucking flies known locally as "*piums*," and which include chiefly the Simuliidae but also Ceratopogoninae, are the insects which conform best to the epidemiological data as vectors of leishmaniasis in the Amazon basin.

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BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

Edited by DR. L. R. DE BUYS, Secretary-Treasurer.

AMERICAN RED CROSS LETTER.

A letter has been received from the American Red Cross which should interest the physicians throughout the state. It draws attention to the fact that only physicians are called upon to conduct First Aid courses of the American Red Cross and eventually to pass on the proficiency of the candidate for a certificate.

In order that the American Red Cross may appoint qualified physicians to give instructions for these First Aid courses it is desired that as many members as possible in the State and Parish Medical Societies be selected as instructors and examiners. The

Red Cross offers to furnish applicants with full information describing such work. Those members of the medical profession who are desirous of doing their bit are hereby given the opportunity.

The objects of the First Aid divisions are to organize classes in Accident Prevention and First Aid to the Injured among men and women in all communities and in every industry; to co-operate with organizations calculated to spread knowledge of accident prevention in all walks of life; to save life; to relieve suffering; to promote human efficiency, etc.

It is not necessary to be a member of the Red Cross to organize or to join a First Aid class.

Persons desiring to organize a class should secure a sufficient number of members—not less than four nor more than twenty-five. A class of ten or fifteen is usually recommended. The minimum age limit is sixteen.

A Red Cross First Aid Course consists of not less than ten lectures and demonstrations of one and a half hours duration, or a total of fifteen hours instruction. In the discretion of the instructor and for the convenience of the class, shorter lectures may be given provided the time is made up by increasing the number of lectures. At the end of the course an examination is held and First Aid Certificates issued to successful candidates.

It is to be hoped that this appeal will result in securing First Aid instructors and in the establishment of First Aid classes in every community in the state.

Those physicians desiring to render assistance to this worthy cause should send in their names to the Secretary-Treasurer so that he might promptly place them in communication with the duly appointed authority.

NEARLY 1000. Only 22 more members needed to make our membership 1000! It is now 978, the largest bona fide membership in the history of the Louisiana State Medical Society. Let us make it 1000. This can easily be done with the assistance of our members. If each member will remember to ask every physician he meets within the next two weeks whether or not he is a member of the State Society and if he is not secure him as a member, the 1000 membership will soon be passed. Only 22 more needed. Let every member help.

MEDICAL SECTION, LOUISIANA STATE COMMITTEE OF NATIONAL DEFENSE.

Meeting of Executive Committee.

MONDAY, AUGUST 13, 1917.

Meeting of the Executive Committee of the State Committee of National Defense, Medical Section, was called to order by the chairman at 8 p. m. on the above date at 1122 Maison Blanche Building, with the following members present: Drs. S. W. Stafford, E. L. Leckert, Charles McVea, C. J. Miller, Isadore Dyer, chairman, and L. R. DeBuys, secretary-treasurer. Absent, Dr. Oscar Dowling, out of the city.

The chairman stated that the organization of the State Committee had been effected on July 3, under the instruction of the Council of National Defense and the American Red Cross, doing away with the original State Committee on Medical Preparedness and the original Red Cross Committee, the two being combined, under the instruction, as the State Committee of National Defense, Medical Section. On July 3, Dr. Isadore Dyer was elected chairman of the committee, and Dr. L. R. DeBuys, secretary-treasurer. The reorganized committee directed the chairman to appoint an Executive Committee of five to coöperate with the officers above named. He appointed Dr. Charles McVea, of Baton Rouge, and Drs. Oscar Dowling, S. W. Stafford, C. J. Miller and E. L. Leckert, of New Orleans, on said committee.

The chair stated that the membership of the State Committee had been outlined in the original instructions from Washington, to consist of the original committees of the Red Cross and Medical Preparedness, of the ranking medical officer of the Louisiana National Guard, of the surgeon at Jackson Barracks, of the deans of medical schools, of the Medical Reserve Corps officers in the State, and of the president-elect and secretary of the State Medical Societies, and of other persons who had been active in the work relative to the purpose of the committee. Upon motion, the action of the officers was approved, and it was voted that the chairmen of the several auxiliary parish committees should be included in the membership of the State Committee of National Defense, Medical Section.

It was further moved and voted that, when compiled, the membership of the State Committee should be notified of their membership, with the request for their acceptance individually and their approval of the policy that the routine business of the State Committee shall be conducted by the Executive Committee, with the understanding that all matters requiring the action of the State Committee as a whole shall be submitted through the mail for ballot, in the absence of a stated meeting of the entire State Committee.

The officers reported that, with the purpose of obtaining an exact list of the Medical Reserve Corps officers in the State and of those who might be available for such service, a card had been issued, with specific inquiries covering the information necessary for a proper classification of the medical men in the State. Nineteen hundred and forty-one of these were sent out, and over 600 replies have been received. The basis of inquiry will permit a classification of men thirty-five years of age and under, over thirty-five and under forty, and over forty years of age, with a statement of their availability or not, and, if not, the reasons why they shall not be qualified for the Medical Reserve Corps. As over 100 replies received expressed a desire for service with the Medical Reserve Corps, the circular would seem justified.

Upon motion, it was voted that the action of the officers in undertaking the census of the profession of the State, with the object of deriving exact information as to the Reserve Corps for other purposes in classifying the profession, with the idea of supplying the central authorities with the desired information, be approved.

The following preamble and resolutions were offered and voted:

In view of the fact that other States have, through their Medical Section of State Committee of National Defense, submitted formal resolutions covering a selective draft of medical men for military duty, the Medical Section of the State Committee of National Defense of Louisiana offers the following resolution:

Whereas, the estimate of medical men available for military duty under the age of thirty-one years would seem to total some 12,000, based upon the average annual graduation of 4,000 men over the age of twenty-six years, and discounting the total by the number serving as interns in hospitals and otherwise exempted; and,

Whereas, the census to date of the State of Louisiana shows a total of some 12 per cent of the quota of an estimated 20 per cent either already commissioned, examined or willing to be examined for the Medical Reserve Corps; and,

Whereas, the proportion of men still available through voluntary

application is large enough to more than cover the estimated number to come from Louisiana.

Be it resolved, That the selective draft is not at this time necessary in the State of Louisiana.

A communication was read from the Council of National Defense covering the personnel of the Medical Corps and of the Medical Reserve Corps of the United States of America, through which adequate recognition of the medical organization of the army is proposed, with ranks equal to provision now existing for other divisions of the army service. The bill is known as the Owen Bill (S. 1786, Sixty-fifth Congress, First Congress), and the communication urges all State committees to use influences with the representatives in Congress for its passage.

It was voted that the chairman and secretary be instructed to telegraph the Senators and Congressmen of Louisiana to exert influence for the passage of the bill. Further, that the members of the State Committee be urged to likewise communicate with their respective representatives in Washington to the same end.

A communication from the Surgeon General's office was received, covering the general status of the Medical Reserve Corps in the State, advising a survey and classification of the medical men in the State as to their availability for the Medical Reserve Corps.

As this census had already been undertaken by the officers of the State Committee of National Defense, Medical Section, the communication was referred to the officers, with the instruction to proceed with the other matters contained.

A communication from the Committee on State Activities of the Council of National Defense was received, covering the classification of physicians in the State for military service, the encouragement of applications for the Medical Reserve Corps, the exemption of medical students and the organization of local committees of the Medical Section of the State Committee of National Defense, for the purpose of reducing the rejections of recruits through correction of defects before examination.

On motion, the chairman and secretary were instructed to cover the several items in the communication by suitable action.

Upon motion, the chairman and secretary were instructed to obtain government stationery and franking privileges attached to the correspondence and other mail matter to be mailed in connection with the operation of the committee. Like instruction, on due notice, was given the chairman and secretary to obtain contribu-

tions from the members of the medical profession of the State in the sum of one dollar per capita to cover the expenses of the operation of the Medical Section of the State Committee of the National Defense in the event that funds are not otherwise provided.

Upon motion, the meeting adjourned *sine die*.

ISADORE DYER, Chairman.

L. R. DEBUYS, Secretary-Treasurer.

From the Surgeon General to Chairman, State Committee, Medical Section, Council of National Defense.

Subject: Medical Reserve Corps, U. S. Army.

1. It is believed that it would be of great advantage to this department if each State Committee would make a census of its State with a view of dividing the medical profession into two classes: (a) those who cannot be spared for army service because of their importance to the civil community; and (b) those who can be spared. Class (a) should be requested to refrain from offering their services. Class (b), on the contrary, should be encouraged promptly to apply for appointment. This office is frequently called upon to give advice along these lines in individual cases, but the department does not care to assume this responsibility, believing, as it does, that the question is one that can much better be decided by the State Committee acting in conjunction with the County Committee.

2. The department will not feel called upon to consult the list prepared under paragraph 1 when individual applications are received, since it will be assumed in all cases that the individual offering himself can be spared and will be at the disposal of the department for such duty as the exigencies of the service may demand.

3. For the purpose of this census, the State Committee should act as a clearing house for the County Committees.

4. Frequently inquiries are made as to whether a medical officer will be assigned to duty in accordance with his medical specialty. In this connection, attention is invited to the fact that a large proportion of the administrative work of the Medical Department of the newly organized army will fall upon the officers of the Medical Reserve Corps. The officers of the regular establishment are so few in number that they will be available for only the most important administrative positions. With this in mind, it will be readily understood that officers of the Reserve Corps must largely supplement their technical knowledge by a clear conception of military co-ordination and administration before they can be of the greatest service to the department.

5. They should offer themselves without reservation, considering their medical training as the basis upon which to build their education as medical officers.

6. It is true, nevertheless, that all officers of the Reserve Corps are card-indexed according to their special qualifications, and that when the army is fully organized and working smoothly every effort will be made to assign each officer where his special qualifications will be most useful to the Government and where the work will be congenial to the officer himself.

7. The department has at its command, at present, only about one-

half the number of officers that will be required for an army of two million men.

8. If your State Committee believes that, by direct and personal appeal, many of your desirable physicians may be led to apply for appointment in the Medical Reserve Corps, you are requested to name two or three medical men of high standing WHO HAVE ACCEPTED THEIR COMMISSIONS in the Reserve Corps, who shall plan an itinerary of the State for the purpose of making such appeals and conducting the necessary examinations. This journey must be a continuous one, the precise schedule being submitted to the Surgeon General's office before any order can be issued by the Adjutant General calling these men to temporary active duty and authorizing their travel. Such an itinerant board should secure the co-operation of the County Committees before beginning its tour.

9. Your committee is urged to take such steps as may secure the prompt acceptance of commissions issued, or their immediate return to this office.

10. To your committee I wish to express my appreciation for the generous and efficient help which you have given to the Medical Department during the present emergency.

W. C. GORGAS,
Surgeon General, U. S. Army.

NOTICE.

Journal readers who have not yet applied for the Medical Reserve Corps and who wish to do so, should return the cards of the State Committee on National Defense at once. By complying with this it will be possible to arrange for examinations in various parts of the State at an early date. Full particulars regarding the examination for the Reserve Corps may be had by addressing Medical Reserve Corps Examining Board, 1551 Canal street, New Orleans.

NEWS AND COMMENT

PHILIPPINE ISLANDS' QUARANTINE STATION—The Island of Cautit, Province of Cebu, Philippine Islands, has been set aside by President Wilson for the use of the Quarantine and the Marine Hospital Services. This island is now being used by the United States as a quarantine station.

BRITISH MEDICAL CASUALTIES—Official information has been obtained stating that total casualties among British medical officers on the western front from the beginning of the war to June 25, 1917, are as follows: Killed, 195; wounded, 707; medical officers dying from sickness, 62. This is contrary to the statements as to the large number of casualties among British medical men.

TRACHOMA IN THE ARMY—A warning to recruiting officers to

guard against accepting applicants who may be suffering from trachoma has been issued by the Public Health Service.

TUBERCULOSIS CONFERENCE—The fifth annual Mississippi Valley Conference on Tuberculosis will be held in Minneapolis and St. Paul, October 8-10, under the presidency of Mr. James Minnick, Chicago. The sessions of the first day will be held at Hotel Radisson, Minneapolis, those of the second at the State University, and those of the third day at the Hotel St. Paul.

WOMEN MEDICAL STUDENTS AT COLUMBIA—A gift of \$50,000 from Mr. George W. Brackenridge of San Antonio, Texas, will enable Columbia University to open its doors to women students this fall. Work on the addition to the present building has begun, which will provide extra laboratory facilities in the departments of chemistry, pharmacology, pathology and bacteriology.

GERMAN SYNTHETIC DRUGS BANNED—On July 21, the Treasury Department revoked the licenses, involving seven of the chief chemical firms of Germany, under which German chemical firms have been exporting to the United States through northern European neutral countries, serums, vaccins, antitoxins and other biological products. The inability of the Treasury Department to inspect the plants of the companies on account of the war is the cause of the revocation.

CONTROL OF CANCER—A resolution was adopted by the National Council of the American Society for the Control of Cancer, at its June meeting, commending the "action of the U. S. Bureau of the Census in publishing its notable report on the mortality from cancer in the U. S. Registration Area in 1914, and recording its appreciation of the courteous cooperation of the Director of the Census and all members of his staff who contributed to the contribution of this unique volume, which represents an unparalleled contribution to the statistical study of malignant disease, and has already furnished the basis for many promising special investigations."

MEETING OF OBSTETRICIANS AND GYNECOLOGISTS—The thirtieth annual meeting of the American Association of Obstetricians and Gynecologists will be held at the Robert Treat Hotel, Newark, N. J., September 17-19, under the presidency of Dr. John William Keefe, Providence, R. I. Dr. Edward J. Ill, Newark, is chairman of the committee of arrangements.

ORTHOPEDISTS ELECT OFFICERS—At the annual meeting of the

American Orthopedic Association, held in July, the following officers were lected: president, Dr. Hebert P. H. Galloway, Winnepeg, Manit.; vice-president, Dr. Walter G. Stern, Cleveland; secretary, Dr. John Ridlon, Chicago, and treasurer, Dr. Gwilym G. Davis, Philadelphia.

GIFT FROM AN AMERICAN UNIVERSITY—The municipality of Lyons has received from the University of Columbia the proceeds of a prize of \$2,000, which it has bestowed on the work of Edward Herriot, mayor of Lyons, "*Les oeuvres de guerre lyonnaises.*" This sum will form the first donation toward a Franco-American sanatorium founded by the municipality for the reception of tubercular patients.

ELEVEN THOUSAND COMMISSIONS OFFERED, FIVE THOUSAND ACCEPTED—Out of 11,000 commissions offered in the Medical Reserve Corps, only 5,000 have been accepted, according to the Council of National Defense. An investigation of the cause of this condition of affairs is being undertaken by the medical section of the Council.

SELECTIVE DRAFT FOR DOCTORS—Congress is being petitioned by the doctors attached to the various hospitals in New York City to provide for a selective draft for American doctors for military service. The petition emanates from the medical section of the Council for National Defense and urges a selective draft for doctors between 21 and 45 years of age to act as medical officers, and to exempt them from service in the national army as privates.

TO COMMEMORATE WORK OF DR. MCINTYRE—The American Academy of Medicine, in appreciative commemoration of the work of Dr. Charles McIntyre, Easton, Pa., secretary of the academy for forty-five years, announces that it will give two prizes to be awarded at the annual meetings in 1918 and 1921, respectively. The subject for 1918 is "*The Principles Governing the Physicians' Compensation in the Various Forms of Social Insurance,*" and "*What Effect Has Child Labor on the Growth of the Body?*" will be the subject for 1921.

MISSISSIPPI NURSES PASS STATE BOARD—At the recent examination of the board of nurses' examiners, held in Greenville, Miss., twenty-seven were registered for the state of Mississippi.

SOIL POLLUTION SURVEY—The International Health Board is collaborating with the State Board in furnishing money for health survey work in Louisiana under the direction of the State authori-

ties. Dr. R. S. Crichlow, a 1917 graduate of the Tulane University School of Medicine, has been appointed as the soil pollution survey specialist under the direction of Dr. Oscar Dowling, President of the State Board of Health, and will go to Laurel and Bay St. Louis, Miss., to study under specialists at those places. The international Board will provide for other specialists in this work, and prefers graduates of Johns Hopkins and Tulane Universities.

THE NATIONAL BOARD OF MEDICAL EXAMINERS held its second examinations in Washington, D. C., June 13 to 21. There were 24 qualified candidates, 12 of whom appeared for examination, the others having been ordered into active duty between the time of their application and the date of the examination. Of the 12 who took the examination, 9 passed.

The next examination will be held in Chicago, October 10 to 18. The regular Corps of the Army and Navy may be entered by successful candidates without further professional examination, provided they meet the adaptability and physical requirements.

There will also be an examination in New York City in the early part of December.

For further information, address the secretary, Dr. J. S. Rodman, 2106 Walnut St., Philadelphia, Pa.

THE UNIVERSITY OF TORONTO has decided to increase the length of the undergraduate course in medicine from five to six years. This regulation, however, will not be practiced until after the close of the war.

MORTALITY FROM TUBERCULOSIS—A circular letter has been sent out by the Department of Commerce, the Bureau of the Census, inviting the co-operation of all physicians in carefully recording or supervising the statements of occupations on death certificates. The Bureau is planning a monograph on the mortality from tuberculosis covering the year 1918, and the value of the monograph will depend largely on the accuracy of the information in regard to the occupation of decedents.

THE LOUISIANA STATE BOARD OF EXAMINERS has added Alabama to the list of states with which this state reciprocates, we are informed by the acting secretary, Dr. E. W. Mahler. This makes the list now include thirty-three states as follows:

Alabama, Arkansas, California, Colorado, Delaware, District of Columbia, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky,

Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Pennsylvania, Utah, Vermont, Virginia, West Virginia, Wisconsin and Wyoming.

REMOVALS—Dr. B. P. Blackstone, from Lindsay, Montana, to Ames, Iowa. Dr. H. D. Bulloch, from Folsom, to Covington, La.

PERSONALS.—Dr. J. C. Cole, Robt. Bernhard, C. J. Gondolf, Edmund Moss, of New Orleans, and Robt. A. Strong, of Pass Christian, have been assigned to special work at Fort Sam Houston for the purpose of examining officers and soldiers, so as to exclude tuberculosis.

Dr. C. Jeff Miller, of New Orleans, was appointed by the Governor as chairman of the Federal Exemption Board for the New Orleans District.

Dr. Isadore Dyer, Major in the Medical Reserve Corps, has been ordered on active duty, for the present at New Orleans.

PUBLICATIONS RECEIVED

W. B. SAUNDERS COMPANY. Philadelphia and London, 1917.

The Surgical Clinics of Chicago. June, 1917. Vol. 1.

The Medical Clinics of North America. July, 1917.

The Baby's Food, by Isaac A. Abt., M. D.

The Science of Nutrition, by Graham Lusk, Ph. D., Sc. D., F. R. S. (Edin.) Third edition.

C. V. MOSBY COMPANY. St. Louis, 1917.

Handbook of Gynecology, by Henry Foster Lewis, A. B., M. D., and Alfred de Roulet, B. Sc., M. S., M. D.

THE YEAR BOOK PUBLISHERS. Chicago, 1917.

The Practical Medicine Series. Volume III. The Eye, Ear, Nose and Throat. Edited by Casey A. Wood, C. M., M. D., D. C. L.; Albert H. Andrews, M. D., and George E. Shambaugh, M. D.

WILLIAM WOOD & COMPANY. New York, 1917.

Manual of The Diseases of the Eye, by Charles H. May, M. D. Ninth edition revised.

THE MACMILLAN COMPANY. New York, 1917.

The Modern Milk Problem in Sanitation, Economics, and Agriculture, by J. Scott MacNutt.

The Mastery of Nervousness, by Robert S. Carroll, M. D.

F. A. DAVIS COMPANY, Publishers. Philadelphia, 1917.

Building Human Intelligence, by Dr. Arnold Lorand. Translated from the German, by Philip Fischelis, M. D.

Materia Medica and Prescription Writing, by Oscar W. Bethes, Ph. G., F. C. S. Second revised edition.

WASHINGTON GOVERNMENT PRINTING OFFICE, Washington, D. C., 1917.

Public Health Reports. Vol. 32, Nos. 27, 28, 29 and 30.

Report of the Health Department of the Panama Canal. May, 1917.

Rural Obstetrics, by Grace L. Meigs. Children's Bureau.

MISCELLANEOUS.

Medical and Surgical Reports of the Episcopal Hospital. Vol. 4. (Press of Wm. J. Dornan, Philadelphia, 1916).

Quarterly Bulletin Louisiana State Board of Health. New Orleans, June, 1917.

REPRINTS.

Biopsy and Cancer—A Review; The Cancer Campaign Quarternary; The Problem; The Public; The Patient; The Physician. By Wm. Seaman Bainbridge, A. M., Sc. D., M. D., C. M.

Historical Notes on the Medical School of the University of Pennsylvania, with Some Discussion of Recent Problems in Medical Teaching. By Charles K. Mills, M. D., LL. D.

The Influence of secretin on the Number of Erythrocytes in the Circulating Blood. By Andrew W. Downs and Nathan B. Eddy.

Acanthokeratoderma Praecornufaciens. By Albert J. Chalmers, M. D., F. R. C. S., D. P. H., and Selim Atiyah, B. A., M. D.

A Case of Ulcerating Granuloma Refractory to Intravenous Injections of Antimony, X-rays, and Other Forms of Treatment. By George C. Low, M. A., M. D., C. M., and H. B. Newham, M. D., M. R. C. P.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for July, 1917.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	12	9	21
Intermittent Fever (Malarial Cachexia)	1	1	2
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough	2		2
Diphtheria and Croup			
Influenza	3	1	4
Cholera Nostras		1	1
Pyemia and Septicemia			
Tuberculosis	44	65	109
Cancer	29	9	38
Rheumatism and Gout	2		2
Diabetes	1	1	2
Alcoholism	2		2
Encephalitis and Meningitis		1	1
Locomotor Ataxia	1		1
Congestion, Hemorrhage and Softening of Brain	26	13	39
Paralysis	3	1	4
Convulsions of Infancy	1	1	2
Other Diseases of Infancy	4	14	18
Tetanus		1	1
Other Nervous Diseases	5		5
Heart Diseases	53	33	86
Bronchitis		2	2
Pneumonia and Broncho-Pneumonia	6	20	26
Other Respiratory Diseases	1		1
Ulcer of Stomach		1	1
Other Diseases of the Stomach	3		3
Diarrhea, Dysentery and Enteritis	22	25	47
Hernia, Intestinal Obstruction	3	2	5
Cirrhosis of Liver	13	4	17
Other Diseases of the Liver	4	4	8
Simple Peritonitis	1	1	2
Appendicitis	6		6
Bright's Disease	16	19	35
Other Genito-Urinary Diseases	15	8	23
Puerperal Diseases	7	4	11
Senile Debility	5	1	6
Suicide	2	1	3
Injuries	21	13	34
All Other Causes	27	22	49
TOTAL	341	278	619

Still-born Children—White, 25; colored, 32; total, 57.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1000 per annum for month—White, 14.82; colored, 32.71; total 19.65. Non-residents excluded, 16.99.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure. 30.02
Mean temperature. 83
Total precipitation. 8.35 inches
Prevailing direction of wind, southwest.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITORS:

CHARLES CHASSAIGNAC, M. D.

ISADORE DYER, M. D.

COLLABORATORS:

C. C. BASS, M. D., Prest., Amer. Soc. of Tropical Medicine.....	} <i>Ex Officio</i>
JOHN M. SWAN, M. D., Secty. American Soc. of Tropical Medicine.....	
L. R. DE BUYS, M. D., Secretary Louisiana State Medical Society.....	} <i>Ex-Officio.</i>
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No. 4

EDITORIAL

AN ACKNOWLEDGMENT.

Since the last number of the JOURNAL was issued the interpretation of the law governing exemptions has permitted the release of drafted medical students now actually in course of study for the degree, thru their enlistment in the Enlisted Reserve of the Medical Department of the Army. This is as it should be and, while it satisfies the justice due the medical student, at the same time it puts the student in service, subject to call when he may be fit.

The ruling regarding medical students came as an executive order from the President, and the credit for recommending the ruling is due, we are advised, to Provost Marshal General Crowder,

whose interest and discernment discovered the way of interpreting the law of June, 1916.

This acknowledgment should be generally known, as the average medical student and many of their friends may have blamed General Crowder for his former promulgation of rules as set down by the existing law.

THE OUTLOOK.

At the beginning of the campaign for the organization of an increased medical department for the army, and with the large demand upon the medical colleges for their interest and influence in encouraging recent graduates to join the services, there was a small inclination to readjust the standards of entrance for medical students so that a large number of youths might be induced to engage in the medical career. This idea has not flourished. In fact, the inclination seems to be rather to present the opportunity offered to the better educated young man to take up the study of medicine.

There has never been a time when the outlook was better. The military exigencies have made a considerable demand upon the existing medical profession, and it will be several years before the deficiency will be compensated. Meantime the scientific development of medicine goes on rapidly, and it requires an active intelligence in the physician and in the medical student to keep pace with the advance.

The classes in medical schools have grown smaller each year for nearly ten years, due to the more rigid requirements of admission and in course. The results are now quite evident in the demand for doctors in smaller communities and in the serious inadequacy of interns in the hospitals. These are, in themselves, indices of a need for more doctors in this country. Up to 1908 the constant proportion of doctors to the population was about one to five hundred, and this ratio had varied little in fifty years. Now that proportion is more like one to seven hundred and fifty, and, if there is no change in the number of students entering medical schools, the relative number will grow more and more disproportionate. It is idle reasoning to submit that Russia has only one doctor to six thousand people, or that in some other country the population is one to twelve hundred, for we know now that, with the present

supply of medical men, the majority gravitating to the larger cities, there is an unsatisfied demand for more.

The former complacent attitude of medical colleges must change. Students in the subsidiary schools must be educated to the possibilities of a medical career.

The arduous life of the doctor in general practice is not attractive, but, with the development of State medicine and its ramifications, ample variety of occupation is open to those who are intelligently trained. More than this, the present demand for medical officers in the army will, in itself, create a future need for such, and the organization of the military side of medicine will make this a career worth while, particularly as the men who have gone into service will bring home a glamor of experience which will spark the enthusiasm of many a young embryo doctor coming on.

With a proper college preparation, the study of medicine is more attractive and interesting now than it has ever been. The medical course is no longer a hodge-podge of material which had to be taken home and digested afterwards; each course in the medical school to-day is systematically presented as one part of a complex, which, when joined in the student's mind, becomes a working intelligence trained for special endeavor.

With so many youths coming on, and with so many of the occupational fields crowded, for once a chance offers in medicine, and the youth should be advised that now is the time to come in.

GOVERNMENT TRAINING OF MEDICAL OFFICERS.

The Wisconsin State Committee of National Defense, Medical Section, has gone on record in recommending by resolution that Congress create a national college for the training of medical officers for the army and navy and of a National Board of Health. Immediate action is urged.

There should be no great difficulty in accomplishing such an object, and perfect plans may develop as the suggested steps develop.

There are now in operation an Army Medical School, a Navy Medical School and an excellent organization of laboratories and field service in the U. S. Public Health Service. In this time of war these already have some sort of coördination, for, as provided in its creation, the Public Health Service is now a part of the machinery of war.

By the establishment of a national college for medical officers all three services could be brought together in a faculty which could be enlarged so as to take care of a considerable student body.

Men graduated from Class A colleges, with proper clinical training, should be qualified for admission to such a college, and a year of intensive training, as now given in the Army and Navy Medical Schools, would satisfy the desideratum for trained medical officers. By making such a course obligatory upon members of the Medical Reserve Corps hereafter, before advancement in rank is allowed, the whole plan would make for an efficient medical corps.

Conflict of authority and the burden of bureaucratic red tape forms could easily be obviated by putting such a college under the government of a body of administrators made up of retired officers in the services joined by enough civilians of professional pedagogic medical experience to make a well-rounded council to conduct the affairs of such a school. Their administration should be free of any departmental interference. A democratic institution, with a liberal method of conduct and of teaching, would be popular and efficient.

ELIMINATE WASTE.

As suggested again by the Committee of Public Safety of Pennsylvania, it is time to warn hospital authorities, physicians and others using and dispensing drugs and biological products to eliminate waste through carelessness or misapplication.

The demand for some drugs and chemicals, already unusually large, will become enormous if the war lasts long, and the supply is, of course, more than apt to diminish further through lessened production.

Overstocking should be avoided and preparations subject to deterioration should be kept in the most careful manner.

Any one familiar with the management of hospitals knows how wasteful are many surgeons in ordinary times. Everything of that sort is always sinful extravagance, but at the present time it becomes unpardonably criminal.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

URETERAL STRICTURE.*

By H. W. E. WALTHER, M. D., New Orleans.

Stricture of the ureter exists far more frequently than was once supposed and if allowed to go uninterrupted will sooner or later produce serious sequelæ. It has only been with recent years that the finer points in the technic of renal and ureteral diagnosis have been sufficiently perfected to render the findings of a pathological condition such as this reliable. In considering this subject one must clearly differentiate between an obstruction of the ureter and true stricture. As pointed out by Kelly, obstruction is the generic term for any hindrance to the downflow of urine, while stricture is specific in its designation, being limited to the intrinsic narrowings due to disease of the ureteral walls.

The attempt to explain a rational etiology of many perplexing surgical conditions of the kidney has occupied no little place in the recent investigation and writings of genito-urinary surgeons. That a certain proportion of these renal conditions, where the true causative factor remained unrecognized, might have been cases, of ureteral stricture seems not only possible but highly probable. The excellent contributions of Hunner to this interesting subject have done much to elucidate its etiology and mode of treatment. His recent report of 50 cases of ureteral stricture and review of the literature is the most comprehensive which has yet appeared.

Strictures of the ureter have been broadly classified under two heads, viz., *congenital* and *acquired*. Whereas formerly we have been led to believe that the great majority of ureteral strictures were congenital in origin, recent careful investigations have proven conclusively that this variety of ureteral narrowing is extremely uncommon and that infection plays by far the most important part in the production of these strictures. The acquired stricture cases are of two kinds, the *traumatic* and the *inflammatory*. The most

*Read before the Orleans Parish Medical Society, July 9, 1917. [Received for publication July 19, 1917.]

common form of traumatic stricture is that type following operations upon the ureter as ureterotomy for calculus, after a hysterectomy, or following a reimplantation of the ureter after bladder resection. Of the inflammatory types, ureteritis, periureteritis and ureteral calculus are the most common. Strictures produced by tubercular lesions of the ureter secondary to renal tuberculosis or those caused by ureteral calculus irritation will not be considered in this paper.

A narrowing of the ureteral lumen brought about by a ureteritis or a periureteritis of an infective origin may be due to one of several organisms. The vast majority of non-tubercular infections will be found to contain either the colon bacillus, the staphylococcus, the streptococcus, the bacillus proteus or lastly, and most infrequent, the gonococcus. Of the 50 cases personally observed by Hunner, twenty-eight had infected urines. In only two of these infected cases was the gonococcus demonstrated as being the causative factor. That the ureteritis is a secondary infection, usually engrafted upon this structure from a primary focus in either the kidney or in the bladder, undoubtedly accounts for the fact of its being neglected. Inflammation of the ureter has received scant attention from the cystoscopist until quite recently. The infected kidney has occupied so much of the urologist's attention in the past that any possibility of an involvement of the ureter has scarcely ever entered his mind. Yet we are all ready to admit that cystitis is a fairly common complication of pyelonephritis, pyonephrosis, and kindred renal infections. Then what plausible reason can be advanced why the "connecting-link" between the kidney and the bladder, the ureter, should not share in infections harbored in these organs. As a matter of fact inflammation of the ureter frequently exists, mostly in a mild form, however, and the treatment directed at the affected kidney serves equally well for the diseased ureter. Sugimura demonstrated ureteritis in every instance of renal or vesical infection that came to autopsy. Therefore if the renal infection is wiped out the ureteritis is usually seen to disappear with it. But occasionally, for some unexplained reason, chronicity asserts itself in the ureteral lesion and it is then when ureteral stricture is imminent.

Periureteral inflammations, if allowed to go on uninterrupted, have a tendency to produce narrowing of the ureteral lumen the same as ureteritis. These inflammations, occurring most frequently

in the extreme lower portion of the ureter, while most frequently due to infection of the fallopian tube in the female or to infection of the vas deferens and seminal vesicle in the male, may be brought about by infectious inflammatory conditions intimately associated with the ureter.

There are three points along the route of the ureter most often affected by stricture formation, these points corresponding to points of physiological narrowing in this structure. They are, (a) at the uretero-pelvic juncture; (b) at the uretero-iliac juncture; and (c) at the uretero-vesical juncture. The last named constriction, located just above the bladder, is the most common site for stricture formation and it is with this type (uretero-vesical) that this paper will deal principally.

The diagnosis in many instances is by no means easy. Subjective symptoms furnish no clue. As a rule pain, if present, is referred to the kidney area of the affected side. It is not difficult to understand why this should be. The obstruction in the ureter, failing to furnish free drainage for the urine from the corresponding kidney, causes back pressure which in turn produces dilatation of the renal pelvis. It is this distention which produces the pain. Cystoscopy and ureteral exploration are necessary to scientifically diagnose the condition. Yet due to the ease with which one may fall into error, it is well for even experienced cystoscopists to hesitate before making a hasty diagnosis of ureteral stricture. Various intraureteral folds or valve formations, kinks of this structure, neoplasms, calculi, spasmodic contracture, or compression upon the ureter from without (as from abdominal organs or tumors) may retard the passage of ureteral catheters or bougies thereby simulating stricture. Therefore repeated ureteral explorations must be carried out in an effort to pass the obstruction before anything definite is determined. Spasmodic contracture, already alluded to above, observed not infrequently in the mere passage of the ureteral catheter upon a normal individual, must ever be remembered lest one misinterpret such a condition as being a strictural obstruction.

By inserting a catheter up as far as the block and then waiting five or ten minutes the spasm will usually wear off and then the catheter will easily go up to the kidney. This will not occur if true stricture is present.

One of the most exacting of the procedures advocated for diagnosing a stricture in the ureter is by introducing an olive-tipped

ureteral bougie of the Pasteur type into the ureter up to and beyond the point of narrowing and then attempting to withdraw it. Should the shoulder of the olive become caught and some difficulty be experienced in withdrawing same, stricture is very probably the cause. For whereas many conditions other than strictures may retard the passage of an instrument up the ureter, I know of no condition besides stricture which will grasp an instrument upon withdrawal. Ureterograms, in which the outline of the ureter is obtained in the X-ray picture, are also of distinct aid in arriving at a diagnosis provided that the opaque solution can be injected above the obstructing point. The typical picture here obtained is that of the ureter appearing as a dilated pouch above a marked narrowing in the lumen, said narrowing corresponding to the strictured point.

The two procedures above enumerated are particularly adapted to strictures of the lower ureter. Where the constriction occurs higher up, the diagnosis cannot always be made in this way. Frequently the true condition, in the uretero-pelvic variety, is only recognized at operation.

The treatment divides itself under two main heads, viz., (a) transurethral-intravesical manipulations; and (b) operative surgical procedures. Of the simpler methods dilatation of the ureter by means of filiforms, bougies, catheters and mechanical dilators employed through an operating cystoscope furnish very satisfactory means of attaining the desired results. When these methods fail operative interference as by extraperitoneal ureterotomy or by pyelotomy on the kidney of the affected side and doing retrograde ureteral dilation with instruments through the pyelotomy wound. Strictures are most commonly met with in the lower third of the ureter and as this type of narrowing is amenable to dilations by means of operative cystoscopy it is of this mode of treatment that the writer desires to draw particular attention.

Although with the ordinary double catheterizing cystoscope one can accomplish a fair amount of dilating of these strictures, the fact that it accommodates bougies or catheters only to the size of 6 F. and will not permit the use of operative instruments at all, renders its field of usefulness extremely limited. Those doing gynecological urology extensively seem to favor the Kelly endoscopic tube for this work. It undoubtedly possesses some advantages over the lens instruments, but its use is limited to the female bladder.

The operative cystoscope of Buerger is universally used to-day for instrumental manipulation in transurethral work, be it either to the bladder or the ureter. This cystoscope contains a single catheter channel which will admit of any instrument up to 11 F. and its outer sheath will accommodate dilating metal olives up to 20 F. An insulated catheter is used in conjunction with these metal olives so that high frequency current can be applied to the ureteral constriction. The heat obtained in this way, directly applied to the affected part, produces a relaxation of the structures which greatly facilitates ureteral dilatations. The operative cystoscope permits of the use of several small filiforms or bougies at the same time; special dilating catheters of which the Garceau catheter is a type can be employed to advantage. The Garceau catheter at its tip is sized 5 F., from which point it gradually gets larger until at about 15 cm. from the tip it measures 11 F. This catheter will enter most ureters easily and has been very popular for ureteral dilatation work. Numerous ingenious operative instruments have been devised for use through the operative cystoscope and a few of these are useful in ureteral stricture. The intravesical scissors or the knife are employed in meatotomy when the ureteral orifice is found abnormally small. Mechanical dilators for the ureter (either two or four-bladed) of which the Bransford Lewis ureteral dilator is a type, has proven of considerable assistance in surmounting strictures. Whereas any one of the above mentioned instruments may produce the desired result, it is not infrequently the case that one is forced to resort to all of them.

Should one fail after repeated trials to overcome the stricture by cystoscopic means, surgical interference should then be considered. However it is only rational that the simplest procedures be tried first. An anesthetic is rarely required in these cystoscopic manipulations. When found necessary, bladder instillations of solutions of novocain or alypin usually suffice. Apart from these local anesthetics the only other drugs which have a place in this condition are pantopon and papaverin. Experimental pharmacology has recently proven that, in inflammatory conditions of the ureter, pantopon hypodermatically is superior to morphin, not only for the relief of the ureteral colic but also for diminishing the muscular contractions with the ureteral wall. Papaverin, which exerts a direct tonus-reducing effect upon all organs composed of

smooth muscle fibers, has been found to cause relaxation of the ureteral musculature, when solutions of this drug are injected directly into the ureter through a ureteral catheter. My personal experience with both of these drugs has been fairly extensive and I cannot but feel that in them we possess a valuable adjunct in the treatment of ureteral inflammations.

In conclusion the writer desires to state that it is not the purpose of this paper to unduly accentuate the prevalence of ureteral stricture. Though the condition is not extremely common, yet, as stated in my opening paragraph, it is not as rare as we have been led to believe. We should remember that this condition may be a possible cause for some of the intractable cases of renal infection failing to respond to the usual treatment employed in such instances. The mere fact that the ureter admits of a 6 F. catheter does not necessarily rule out stricture any more than that it proves that the kidney on the same side is receiving proper drainage. Therefore in all obstinate renal conditions, where every effort of the clinician has met with failure, one should routinely sound the ureter for stricture. It may be possible that by this means we will be able, in many instances, to achieve a successful termination of an otherwise incurable case.

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CARBUNCLE OF THE UPPER LIP.*

By MUIR BRADBURN, M. D., New Orleans.

The serious nature of this condition is not, I believe, generally recognized; the last case which was referred to our service by a doctor with no considerable surgical experience had been allowed to remain untreated, or rather temporized with, for forty-eight hours after he was first consulted and about one week after the onset of the infection. Dr. John B. Murphy¹ in speaking on this subject said:

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"I recall a man whom I visited some years ago. He had a carbuncle on his upper lip and I had him come to the hospital, although I said it was not anything serious and he would be all right in forty-eight hours. I was not so familiar then with the danger of this condition as I am now. We opened it up at the hospital promptly, but he was dead in thirty-eight hours."

Unless one has had experience with these cases it is likely that he will underestimate the gravity of the condition.

Of 169 cases of carbuncle treated in Charity Hospital I was able to find only four cases of carbuncle of the upper lip; three of these having been admitted to the service of Dr. Parham; in preparing a report for one of his staff meetings I became interested in this subject. Brief clinical notes on these cases are as follows:

Case 1. F. N., white male. Age 48. Admitted November 24, 1915. Died December 3, 1915.

Duration before admission, two weeks. Had "cold" and became "sore about nose." Temperature on admission 101° reaching 106° before death. Urine examination showed no sugar. Cultures from lip showed staphylococci. Treatment, multiple incisions. Lysol, 1 per cent as wet dressing. Silvernitrate, 1/10000 (210 c. c.) intravenously.

Case 2. R. R., male. age 61. Admitted April 17, 1916. Discharged, May 1, 1916. Duration before admission, six days. Record reads: "Upper lip much swollen. Recent incision showing tenacious pus." Treatment: incision in clinic on morning of admission and another subsequently in ward. In this case the temperature was never above 99° , nor pulse above 90.

The only other case occurring in an old patient of which I have record is one reported by Masterman² in a woman seventy-three years old. It is remarkable that both these cases recovered.

Case 3. A. W. Age 20. Admitted October 14, 1914. Died October 24, 1914. Duration before admission, seven days. Treatment: Incision. Four days after admission the lip condition had so improved that he was allowed on porch. Following day he complained of headache. October 20: Nurse's notes record "oozing from nose. Rhinologists reported pus coming from frontal sinus." Death on the tenth day after admission from acute suppurative meningitis. Cultures from lip and from spinal fluid showed staphylococcus aureus.

Case 4. F. W. B. Age 38. Admitted November 11, 1916. Discharged December 10, 1916. Duration before admission, one week. On the day of admission multiple incisions were made in the upper lip. One incision extending parallel to and $\frac{3}{8}$ inches above the vermilion border of the lip and four others at right angles to this. A 5 per cent solution of carbolic acid was injected into the infiltrated tissues between the incisions by Dr. F. W. Parham. At this time some redness was evident in the lower lid, four days later the incision had to be extended up to and through the lower lid, pus being liberated by last incision; although no thrombosis was made out, the extension of the process seemed to indicate a thrombosis extending from the superior labial to the facial and then to the inferior palpebral vein. The dressings were kept saturated with a 5 per cent sodium chloride and 1.1 per cent sodium citrate solution. The temperature four days after admission

reached 104° having been 100° on admission. It remained at a level of 102° until the 15th day. Pulse ranged from 90 to 126. Urine examination showed no sugar.

In a paper entitled "The Surgical Importance of Apparently Simple Carbuncles and Furuncles of the Upper Lip," Chas. A. Powers³ recognized the gravity of these infections and insisted on early surgical intervention. He reports four cases of upper lip infections, one having meningitis as a complication with a consequent lethal termination. Another case shows the tendency of the infection to extend upwards. Briefly they were as follows:

(1). Young physician, death (2 days) acute pyemia and septic meningitis. No record of what was done.

(2). Young gentlemen (medical student). Swelling extended up cheek alongside of the nose to the margin of the orbit. Recovery.

(3). Boy seventeen years old; furuncle of 24 hours standing. Immediate incision; recovery.

(4). Young man of 22. Furuncle, 48 hours. Necrotic area excised. Cultures showed *staphylococcus pyogenes aureus*.

Etiology. In considering the etiology we find from the above cases in which cultures were made that the *Staphylococcus pyogenes aureus* is the offending organism. Only one of these cases was under 38 years; this occurring in a young man of 20. The four cases reported by Powers occurred in young men, those in which ages are given, being 17 and 22. About fifty per cent of cases occur in young adults; in one case the irritation caused by a discharge from the nose in a patient with a cold seemed to initiate the trouble.

The prognosis in these cases is grave. Dr. Murphy in discussing the subject said:

"A furuncle on the upper lip is always a very serious lesion. It always puts the patient in a dangerous situation. It may, in fact, be stated as a general truth that whenever a furuncle or carbuncle occurs in a rich lymphatic zone, the patient's life becomes enormously endangered by it. A carbuncle, however, on the upper lip is, as a rule, fatal, and this rule, too, may be generalized to the effect, namely, that a carbuncle in any zone richly supplied with lymphatics is, usually, fatal."⁴

In the four cases at Charity Hospital the mortality was fifty per cent. One fact that strikes us in examining Powers' cases is the early incision within twenty-four to forty-eight hours in upper lip infections, whereas in our series not one was admitted less than six days after the onset of the infection. The gravity of the prognosis depends not only upon the rich lymphatic supply, but also upon the occurrence of thrombophlebitis extending from the superior labial to the facial thence to the angular vein into ophthalmic, and finally

reaching the cavernous sinus. The cavernous sinus may also become involved through the pterygoid plexus⁵. Johnson⁶ mentions also the danger of thrombosis extending downwards into the internal jugular vein.

Meningitis is a complication to be feared, occurring in one case both in Powers' and in our series. It may occur either through extension to the cavernous sinus and thence to the meninges, or through the lymphatics; in one of our cases presumably through the lymphatics of the nose as these communicate with the subdural and subarachnoid spaces (Gray⁷).

In considering treatment I would urge early incision with injection of 5 per cent carbolic solution into the infiltrated tissue. Once the case ceases to be early we have a difficult problem confronting us. Before considering the treatment of these cases I would like to give brief notes of two cases, one reported by Dodds⁸ and another by Walters⁹. In Dodds' case there was extensive involvement of the lip and face; the temperature was 104°, pulse 160, respiration 40°; patient semi-comatose and delirious. Hemologous vaccin of *Staphylococcus pyogenes aureus* administered, 500,000,-000 at first; 24 hours later, 1,000,000,000; in seventy-two hours 500,000,000 of an autogenous vaccin were given. He reports "Perfect recovery in the course of a week or ten days."

Walters' case was one of "severe facial carbuncle with Ludwig's angina and parotitis." Cultures from upper lip showed *Staphylococcus aureus*. This case had temperature of 103° and pulse of 140. Stock vaccin of 50,000,000 staphylococci was given, followed twenty-four hours later by 25,000,000 of an autogenous vaccin. In four days another 25,000,000 and ten days later 50,000,000. It was noticed in withdrawing blood into a Wright's blood capsule to estimate the opsonic index that it clotted almost immediately. Citric acid one dram in every four hours for four doses was given and repeated on several subsequent days, the dose being reduced later to one-half dram. Solly,¹⁰ in commenting on this treatment, says that "the citric acid so lowered the coagulability of the blood that the lymph containing large amounts of antibacterial and anti-tryptic bodies was freely admitted to the infected parts and the organisms were thereby destroyed before formation of pus or destruction of tissue could take place." He attributes the treatment to Sir A. E. Wright who used the citric acid in a case of Ludwig's angina. In this case staphylococci were obtained on culture; blood

withdrawn from the veins clotted almost immediately. "Administration of one dram doses of citric acid every three hours for six doses caused rapid improvement and finally complete recovery."

In Walters' case no incision was made and he states that the only sign of the illness that was left was a dimple in the left cheek.

Although many of us are inclined, I believe, to discredit the value of vaccin, especially in acute grave infections, yet the results in the above cases seem to indicate their value.

I would suggest then in these cases that

(1.) Multiple incisions be made; these incisions extending down to the mucous membrane.

(2.) The injection of a 5 per cent carbolic acid solution in an attempt to kill the organism.

(3.) The application to the wounds of a hypertonic salt solution with sodium citrate to encourage drainage.

(4.) The use of autogenous vaccins.

(5.) The administration of citric acid in order to lower the coagulability of the blood so that lymph containing antibodies can more freely reach the infected area.

(6.) Ligation of the facial vein has also been suggested. In none of the cases reported, however, has this been done. If it is resorted to it seems logical to excise that portion of the anterior facial vein of which the superior labial is a branch, as there is danger of the thrombophlebitic process extending down as well as up. The excision can be done through a $\frac{3}{4}$ inch incision. This incision parallels the sulcus nasolabialis and about one-half inch above it; the lower end of the incision being on a level with the anterior nares. The superior labial branch can be found about the middle of this incision; the facial vein is found beneath a considerable layer of fat and the levator labii alæque nasi.

In conclusion I wish again to lay emphasis on the serious nature of carbuncle of the upper lip, and to urge the earliest possible surgical intervention in all cases of upper lip infection.

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THE LINGUAL TONSIL—A FREQUENTLY OVERLOOKED STRUCTURE.*

By J. BROWN LAROSE, M. D., New Orleans.

The brevity of description of the pathology and symptomatology of the lingual tonsil in many text books and the fact that it is not readily seen in the usual method of examination of the throat probably accounts for the scant attention generally paid this gland.

The lingual tonsil is a lymphoid body situated on the posterior surface, or base of the tongue, extending from the circumvallate papillae to the epiglottis. It is covered by the lingual mucous membrane and divided in the median line by the glosso epiglottic ligament. Its surface presents numerous nodules with depressed pits or craters, each pit representing the orifice of duct of a mucous gland; a connective tissue stroma binds these nodules together. The nerve supply arises from the posterior lingual, a branch of the glossopharyngeal.

The arterial blood springs from the lingual artery, accompanied by veins which with adjacent veins form a plexus in this region. The lymphatic circulation is especially abundant and empties into the submaxillary and deep cervical lymph glands.

The lingual tonsil, sharing as it does the lymphoid structure of the faucial and pharyngeal tonsil, reaches its greatest development in young children, but unlike the other tissues of this lymphoid ring it has less of a tendency to atrophy about the age of puberty, and frequently persists and enlarges with middle adult life. Its function, apart from that attributed to the lymphoid tissue in this zone is not definitely understood.

A proper method of examination is essential for a diagnosis of the diseases of this structure. The use of the tongue depressor, with correct illumination, while sufficient for a view of the fauces is totally inadequate for a full inspection of the lingual tonsil. The employment of a laryngeal mirror, slightly warmed resting against the soft palate and rotated laterally with projected light from a head mirror, while the patient grasps the tongue with a bit of gauze or a towel and inclines the head slightly backward will expose a complete view of the entire tonsil. The procedure is simple, the technic easily acquired and its inclusion in ordinary

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throat examination will amply repay the practitioner for his thoroughness by disclosing in many cases the seat of trouble in the patient's history, and clear cut indications for treatment.

The diseases of this tonsil though common in frequency are not numerous in number. It is rarely the seat of neoplasm and primary inflammations are not the rule. Inflammatory conditions are usually secondary to involvement of the adjacent faucial and pharyngeal structures. They often persist after evidences of the provoking cause have disappeared, hence the value of inspection, especially in delayed relief of symptoms in throat affections. Foreign bodies, such as fish bone, readily find lodgement in the soft nodular projections and their removal with forceps directed by its image in a laryngeal mirror is not a difficult matter. Acute catarrhal inflammation of the lingual tonsil, usually a secondary condition as just stated, not infrequently is overlooked. Whereas topical applications directed to the evident pharyngitis, gargles, sprays and systematic treatment are prone to assist the lingual tonsillitis, it sometimes happens that this relief does not follow, to the disappointment of the attending physician, who, overlooking this region, sees no objective evidences of the former inflammation. He is then unable to account for the persistent cough, especially worse at night, and vague morbid sensations located deeply in the throat, as described by the distressed patient. The lingual tonsillitis is now in a subacute stage and its recognition and treatment at this time would almost invariably cause a cessation of the cough and sensory disturbances and incidentally the abandonment of a host of sedative and expectorant cough mixtures that have been vainly tried in an attempt to obtain relief.

A topical application of silver nitrate ranging in strength from 25 per cent to 5 per cent, or stronger, depending on its chronicity, would cause the swollen tonsil to rapidly shrink and the symptoms to disappear. A curved applicator, wrapped at its tip with a bit of cotton, impregnated with the silver solution, guided by the throat mirror, is a convenient method of making these treatments. Care should be taken to squeeze the excess of fluid from the cotton to avoid dripping of the solution upon the epiglottis, or more serious still into the larynx.

This pathologic entity must be differentiated from a subacute laryngitis and tracheitis. Inspection shows no inflammatory signs.

in the larynx, the chords especially appearing normally white; there is also an absence of hoarseness and the more or less typical sound of a laryngeal cough. The secretion in these latter conditions is usually more copious and expelled after a fit of coughing, which the patient recognizes as being brought up from a region lower than the base of the tongue.

Follicular and lacunar infections of the lingual tonsil likewise respond to this form of treatment. As in other lymphoid organs neglected acute processes often merge gradually in the chronic form. The principal chronic affections of this tonsil are varix and hypertrophy. Their symptoms are very similar and may be described together. These chronic conditions are rare in children, occurring usually between the age of twenty and forty years. The symptoms are a tickling or pricking sensation in the faucial region which provokes a spell of coughing or the desire to clear the throat. Pain is frequent and the patient indicates its seat by grasping the anterior surface of the neck above the thyroid bone. The pain is often relieved by the ingestion of food or liquid. The sensation of a foreign body is often experienced and this with the annoying cough induces the patient to seek his physician for relief. The use of the voice is often followed by a sense of dryness and constriction of the throat; singing is especially hampered and restricted by this symptom.

In lingual tonsil varix inspection discloses the gland traversed by enlarged blue veins more or less tortuous. Bleeding occasionally occurs due to a rupture of these veins. This localized variety may be unassociated with varicose veins elsewhere in body. When markedly developed and with pronounced symptoms, a few of the veins may be destroyed by the actual cautery brought to a cherry-red heat; the destruction is best secured in successive stages allowing a few days' interval. The post-operation dysphagia and pain are thus minimized.

The treatment of the simple chronic hypertrophic tonsil may consist of the reduction of its size by long continued applications of silver nitrate; failing in this the use of the cautery, or excision of small portions at a sitting with curved scissors will attain the desired end quickly. A special tonsillotome has been devised for this purpose. These operative procedures may be painlessly performed by the preliminary application of 10 per cent or 20 per cent cocain solution.

In adults a hypertrophied lingual tonsil may encroach its lateral enlargement well up in the faucial tonsillar fossa after a complete tonsillectomy. The improper interpretation of this occurrence sometimes is the basis of criticism of a faucial tonsillectomy which has been completely performed.

A markedly hypertrophied lingual tonsil is sometimes found in leukemia, which of course calls for a blood picture and proper systemic treatment. In these hypertrophic states attention should be directed to the eliminative organs, especially the intestinal tract.

In conclusion the suggestion is offered that the region of the lingual tonsil be included in the routine throat examination by the general practitioner. Its inspection will indicate the etiologic factor in many cases of acute and chronic cough and various sensory disturbances attributed to the oro-pharynx. The recognition of the pathologic states described, followed by proper remedial measures will be conducive to the alleviation of much unnecessary suffering and anxiety.

HEMATEMESIS AND MELENA DUE TO LATENT ANEURYSM OF THE AORTA.*

By ISAAC IVAN LEMANN, M. D., New Orleans.

The cases I wish to relate present, it has seemed to me, features sufficiently out of the ordinary to warrant their recordation. Whether I have been justified in the title of this paper may be a matter of some debate. A discussion of the proper interpretation of the clinical facts shall be the burden of my remarks.

Case I. Mrs. X., aged 63, has been under my observation for four or five years. Her complaints have been rather indefinite, chiefly constipation, nocturnal polyuria and occasionally an attack of diarrhea without pain. There has been also slight epigastric distress and flatulence. In 1899 she was operated for gallstones following numerous attacks of violent gall-bladder colic during a number of years. Since the operation she has had no recurrence of pain, nor has she had any jaundice. For many years prior to the menopause she had diarrhea, but since the menopause (at 48) the bowels have been constipated. She had whooping cough and measles in childhood and typhoid as a young girl. Ovarian trouble began shortly after she was married and continued until she was

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38. She has had seven children (of whom only two are living) and numerous miscarriages. Her family history is interesting. Her father, who is said to have had gallstones, died at 63, after vomiting coffee-ground material. Her mother died of asthma and dropsy. There were only two brothers; one died in infancy, the other of locomotor ataxia. Two sisters are living and well; one died in childhood of heart trouble. The patient's husband had chronic interstitial nephritis, chronic bronchitis and bronchial asthma. He died at 70. The patient is an obese woman, of pasty complexion and rather thick, dry skin. Physical examination has shown, since I have known her, a moderately enlarged heart with an accentuated aortic second sound. The systolic blood pressure has usually been in the neighborhood of 160 to 180. The lungs are normal. The liver has not been palpable, and has been apparently normal in size upon percussion. The urine has been of low specific gravity, abundant, with occasionally a little albumen and a few hyaline casts. The phenol-sulphonaphthalein output was forty-five for two hours several years ago. This patient, then, was regarded as having a chronic interstitial nephritis, with moderate hypertension. Her slight attacks of diarrhea had been regarded as eliminative in character. Last June (1916), while she was away from New Orleans, she suddenly one morning felt weak, dizzy, and had a desire to go to stool. The stool was black and accompanied by pain in the abdomen, and was followed shortly by another stool, which was jet-black. After the second stool she vomited copiously very black material. Following this she fainted. That afternoon she took a bottle of citrate of magnesia, and had eighteen stools, all of which were black like tar. She remained in bed, and two days after the onset of the trouble she fainted several times and vomited blood to such an extent that she was entirely soaked in blood. The bowels moved at the same time. After this, the physicians in attendance permitted her to have no stool for over a week, stopped all food by mouth and fed her by rectum. Eighteen days after the beginning of the trouble she made a journey of forty-eight hours and returned to New Orleans. She was slightly pale and a little weak, but in surprisingly good condition after such a terrific experience. The physical examination revealed nothing new. The patient was then brought to the Touro Infirmary, in order that we might have an X-ray gastro-intestinal study made. As a matter of routine, we always fluoroscope the chest prior to giving the barium meal. This routine fluoroscopy revealed, to the intense astonishment of Dr. Samuel and myself, a large aneurysm of the arch of the aorta. Repeated examination since that time, now nine months ago, has not enabled us to make out any signs whatever upon which to make a diagnosis of aneurysm of the aorta. There is no tumor, no thrill, no abnormal dullness, no bruit, no difference of pupils nor of pulses, no tracheal tug, etc. There are no symptoms. The aneurysm is latent and can be made out only by X-ray examination. I may add, in order to complete the record, that the blood examination made at the time of the discovery of the aneurysm showed the following:

Wassermann.	Positive
Red blood cells	4,200,000
Hemoglobin	80%
Leucocytes	5,600
Lymphocytes.	38%
Neutrophiles.	62%

It is remarkable that there should be so little anemia so soon after a tremendous hemorrhage.

Case II. I am able to present, through the courtesy of Dr. C. Jeff Miller, who has kindly furnished me the report: Mrs. Z., aged 52, weight 155 pounds. Her family history is unimportant. She was never seriously ill during childhood, and enjoyed excellent health until ten years ago. She then had performed a supravaginal amputation of the uterus and double salpingo-oophorectomy for fibromyoma of uterus and cysts of the ovaries. After the operation, her health was good. Two years ago she was seized with a vomiting attack while at a theatre and vomited a considerable amount of blood. She remained in bed three or four days under her physician's care and then resumed her duties. No special importance seems to have been paid to the attack by her physician. After the first attack she can recall no digestive disturbances other than occasional attacks of fullness in the stomach and gas distention. The attacks were relieved by soda bicarbonate and regular bowel habits. In February, 1917, she was awakened one night by nausea, and later vomited a large amount of dark material, which an experienced nurse on duty in the house promptly recognized as blood. An hour later she had a large bowel movement, consisting principally of dark blood. It was then she came under the care of Dr. Miller. The nausea persisted for two days, with occasional vomiting spells and several bowel movements, all of which contained blood. Symptoms of acute anemia promptly developed, and arrangements were made for infusion, or transfusion, if demanded. There were no symptoms of pulmonary complications nor cardiac changes noted, although a detailed examination was not made, owing to the necessity of keeping the patient absolutely quiet. A tentative diagnosis of gastric ulcer or carcinoma was made. After ten days of absolute rest, rigid diet restriction and ice-bag applications an X-ray examination was made by Dr. E. C. Samuel at Touro Infirmary. Dr. Samuel reports that fluoroscopy of the chest "shows an aneurysm of the aorta, probably at the ascending or transverse portions. Its greatest diameter measures about 12 c. m. A definite pulsation, with an observation made from the anterior and posterior aspect, and the lateral, shows a considerable bulging forward. There is no esophageal symptom, as the aneurysm is causing no pressure in that direction." The gastro-intestinal X-ray pictures were negative. The patient has recovered from the acute anemia and is apparently in as good health as before the hemorrhage occurred. After the X-ray revealed the true nature of the lesion a further examination of the heart was made and some hypertrophy was found. **No other evidence of the true lesion could be detected** by the physical signs. She recalled, after repeated inquiries, that she had experienced, for about four months, some difficulty in breathing after walking upstairs.

Rupture of aneurysms of the aorta into the esophagus, thus producing hematemesis, is not uncommon. A large percentage of aortic aneurysms rupture somewhere, as I have shown in another paper. Thus, in my series of fifty thoracic aneurysms proven at autopsy, eleven had ruptures, or 22 per cent. Hall has reported forty-one ruptures in a series of ninety-eight cases, or nearly 41 per cent,

and in another series eight ruptures in thirty-five cases, or 23 per cent. Browne reported sixty-four ruptures in 160 cases, or 42 per cent. Of all ruptures, those into the esophagus form a considerable percentage. Thus, in my series of eleven ruptures, three had been into the esophagus, or over 27 per cent. I have collected from the literature 592 cases terminated by ruptures; of these, rupture had been into the esophagus in fifty cases, or 8.4 per cent. But, when rupture occurs into the esophagus, death usually supervenes promptly. In the two cases I have reported, the patients have recovered and are apparently in fairly good health, one of them after nine months. If we are to attribute the hematemesis and melena to the aneurysm, we must assume that there has been an erosion into the esophagus, usually well guarded by the laminated clot of the sac, that this clot has been slightly disturbed for a time, permitting the hemorrhage, and then finally, when the blood current was slowed by the falling blood pressure, a new plug was formed. As I have intimated, at the onset I have not found such an explanation entirely satisfying. We must necessarily question whether the hemorrhage was *due* to the latent aneurysm, and not to some other disease existing in addition to the aneurysm. As regards the probability of a co-existing gastric ulcer or carcinoma, it would, however, seem curious that there has been in both cases so little progress of gastric symptoms. Gastric carcinoma seems out of the question, and gastric ulcer improbable. Another possible co-existing condition is esophageal varix. This occurs quite commonly in cases of cirrhosis of the liver, and there are many cases on record of tremendous gastric hemorrhages due to such esophageal varices. I have seen such a case. There is nothing, however, in either patient to justify a diagnosis of hepatic cirrhosis. One naturally thinks of pressure upon the esophagus by the aneurysmal mass producing varicose veins, and hence of the possibility of the rupture of such veins producing the hemorrhage. In neither patient was there ever any subjective evidence of pressure upon the esophagus, as, for example, difficulty in swallowing. In neither patient did the fluoroscope indicate that the pressure was backward. It is to be remembered, too, that the veins of the lower part of the esophagus drain into the portal system.

With all the evidence before me, I am still inclined to the view that these hemorrhages were due to the latent aneurysms, and not to some co-existing cause. The coincidence would be almost too

great to explain in two cases. And yet I cannot refrain from a final warning against unwarranted assumptions in this particular, for I bear in mind a recent experience which taught a useful lesson. A negro adult was admitted to the Charity Hospital suffering from dyspnea. It was not difficult to diagnosticate an aneurysm of the aorta. He had a distinct, prominent pulsation in the left infra-clavicular space, with retromanubrial dullness continuous with that over the pulsating mass, vertebral dullness extending down to the fourth thoracic vertebra. The whole apex of the left lung was dull down as far as the fourth thoracic vertebra. In addition, there was present a thrill and a bruit. The patient had dysphonia and a hard, brassy, typical cough. The dullness at the left apex was attributed to compression of the lung by the aneurysm—a condition we have often met in previous aneurysm cases. The X-ray confirmed the diagnosis of aneurysm. Suddenly one night the patient had a tremendous hemorrhage from his mouth and died in a few minutes. Naturally his death was attributed to a rupture of the aneurysm. Autopsy showed an intact aneurysmal sac. The hemorrhage had proceeded from a ruptured blood vessel dangling in a small tuberculous cavity the size of a walnut in the apex of the left lung.

DISCUSSION ON THE PAPER OF DR. LEMANN.

Dr. Sidney K. Simon, New Orleans: Dr. Lemann's presentation of these two cases opens up a field for thought and contemplation. I did not have the advantage of reading the doctor's paper before its presentation, and only heard it for the first time as I sat there.

The first case he presented brought to my mind very distinctly a lady I have had under my observation for some years who presented some very interesting features, very closely simulating the first case Dr. Lemann presented. This woman had a severe hemorrhage from the stomach, was vomiting large quantities of blood and pus, and had melenous stools for a period of a week following hemorrhage, with, of course, tremendous shock from the immense loss of blood that occurred at the time of the hemorrhage ten days previous. She recovered promptly under a simple, ordinary treatment of rest and restricted diet, having been treated at that time by a local physician for ulcer of the stomach. She never presented any symptoms on part of the stomach before or since. About three years ago she moved to the City of New Orleans. Some two months ago she suddenly developed a hemorrhage, a bladder hemorrhage, as she began passing blood. I had her under observation for a slight rectal trouble. I called in my confrère, Dr. Nelken, to investigate that particular feature of her case. We took X-ray pictures of the kidneys. He made most elaborate examinations of the bladder with the cystoscope and could not find any cause for the

hemorrhage. In spite of that, she persisted in having hemorrhages from the urine on several occasions, until one day, about three weeks after the first blood appeared in the urine without warning, she had another severe hemorrhage from the stomach, vomiting enormous quantities of blood. I got there quickly and I found her still vomiting blood, about half an hour having elapsed, and I believed she was going to die. Much to my surprise and delight, she recovered completely in the course of the day. She had absolutely no symptom or pain, except she was weak and passed blood through the bowel.

I had percussed the heart with reference to the possibility of aneurysm in her case and made a most careful observation. There is positively no sign or symptom, in her case, of aneurysm, yet, in view of what Dr. Lemann has said, my mind has been open, and I shall have an X-ray taken of her thorax and of her kidney region. We had no suspicion of aneurysm at that time, and did not consider her thorax. I have considered the possibility of aneurysm that represented a condition of advanced arteriosclerosis of the abdominal vessels, and particularly those vessels leading to the kidney and stomach, in her case. She has a high blood pressure. She has a systolic blood pressure of 190 to 200. This came down considerably following hemorrhage and again went back to a high standing. She has palpable, sclerosed arteries, as elicited by inspection. The Wassermann reaction was negative. That is the only explanation I can give as to the possibility of arteriosclerosis with rupture or so-called gastric apoplexy. That is reasonable and possible, and may be the cause of the hemorrhage in the two cases Dr. Lemann has reported, because we find those conditions co-existing in cases of aneurysm and advanced arteriosclerosis.

I want to take occasion to say that, because we know of the possibility of aneurysm in a latent form, it is a constant sword hanging over my head in using the stomach tube as frequently as I do. I have that constantly in mind, and I make every endeavor, before I pass a stomach tube on a case, to thump the chest and auscultate the cardiac region and the pulmonary region, to be sure that I am not running into some latent, hidden possible source of hemorrhage which might be brought to the surface with the straining and rising blood pressure which invariably accompanies the introduction of the stomach tube.

Dr. Lemann (closing): I think the suggestion that Dr. Simon has made is a very plausible one. In fact, I am sure the man who had my first patient in charge at the time of hemorrhage had that in mind—namely, that the gastric hemorrhage was due to gastric apoplexy.

The only question which I wish to bring up is whether the hemorrhage was due to the aneurysm or due to some cause which had a common etiology with the aneurysm, or some cause which was independent of the aneurysm.

I can quite sympathize with the second point Dr. Simon has made—namely, the fear of running into trouble in passing a stomach tube. I have almost reached the point where I prefer to fluoroscope the chest before passing the stomach tube. In private practice I have come almost to the point where I would rather do gastro-intestinal X-ray study first.

We do not realize the frequency of aneurysms of the aorta. In a paper published in the "American Journal of Medical Sciences" last year, I showed that in 2,000 routine autopsies conducted at the Charity Hospital one patient out of thirty was found to have an aneurysm of

the aorta. That is something stupendous. My experience is not isolated. Osler gives practically the same figures from the Johns Hopkins Hospital in his article in "Modern Medicine"—that is, one autopsy out of thirty showed aneurysm of the aorta. In 15,000 cases coming to the Touro Medical Clinic, taking them as they came, Dr. Eshleman and I were able to diagnose three aneurysms in 1,000 cases. In other words, the autopsies showed aneurysms in 3 per cent and the 15,000 clinic cases showed aneurysms in one-third of 1 per cent. These cases were recognized; how many more were overlooked we do not know. That gives you an idea of the frequency of aneurysm of the aorta.

I do not take any great credit to myself in being particularly keen in making the diagnosis. It is my belief that if we have our eyes open and look for them we will find them. Osler has said that there is no disease which makes so much for clinical humility as aneurysm of the aorta.

ARE MOVING PICTURES INJURIOUS TO THE EYES?*

By C. A. BAHN, M. D., New Orleans.

It is estimated that there are fifteen thousand moving picture theatres in this country, with a daily attendance of ten million.¹ The small cost, short duration, constant performance, mental and physical relaxation, interesting and instructive portrayal of science, comedy, tragedy, romance, history and morality make the movie our national amusement.

The ready adaptability of the moving picture may be appreciated when we consider its application to the field of botany and zoology for the study of plant and animal life; to physiology, in the functional studies of the various organs; to surgery, in the study of operative technic; to medicine, in observing the changes in disease; to efficiency, in the elimination of unnecessary motions; to history, in the portrayal of important events for future reference; to salesmanship, in pictorial description.

The photograph of a moving object taken and displayed before the eye at the rate of about sixteen per second is interpreted as having continuous motion. The sight mechanism requires about one-twelfth of a second to record a distinct mental picture of a moving object. Faster impressions are merged into continuous motion. For continuous and natural motion, pictures must be photographed and projected at exactly the same rate. Faster projection gives the jerky, automaton motion; slower, the uncanny, walking-on-air appearance.

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The source of illumination used in projection is a limelight or an arc, usually of about two thousand candle-power, focussed on the distant screen by a reflector and a series of lenses. Interposed is the celluloid or composition film, which ranges from about five hundred to twelve thousand feet long, and has photographed on it, by the primary negative, the series of pictures, each three-fourths of an inch by one inch. By means of perforations on both sides, sprockets, pressure rollers and other mechanism, the film is drawn downward over the lens aperture at the proper uniform rate. Each individual picture is absolutely still while being projected. Then, during an interval of about one-one-hundredth of a second, by means of the rotary shutter or electric cut-out, the light is shut off from the screen, while the next picture is being drawn before the lens aperture. Even the slightest interval in which light passes through the aperture, without a film picture interposed, causes flickering. Flickering, white balls or star lines, etc., are due to defective mechanism or film. They greatly increase ocular fatigue and are harmful and unnecessary. By means of the lens system the film picture is magnified about ninety-five thousand² times on the screen. The slightest imperfection of film or mechanism is correspondingly magnified.

How are moving pictures seen and interpreted? Visible light is produced in the human eye by ether waves, varying from approximately one-thre-hundred-thousandths to one-six-hundred-thousandths inches long,³ and frequently, from twenty million of million to four hundred million of million per second.⁴ Objects are focused by the dioptric apparatus on the retina, inverted. Here, neuro-chemical changes transform light rays into specific nerve stimuli. These are carried along the optic nerves, either directly or in relays, to the primary or lower visual cortex in the occipital lobe. This represents the simplest visual concept. This concept becomes more complete and complicated by association with the higher visual and sensory areas.

A certain proportion of the bodily nervous energy is required by the sight mechanism to functionate properly. Any defect of the sight or moving picture mechanism increases this eye load, and therefore the relative proportion of eye energy necessary to main-

1. Bishop. Good and Bad Effects of Moving Pictures on the Eye. *Medical Times N. Y.*, Vol. 43, 1915, p. 231.

2. Hart. Ocular Disturbances Caused by the Cinematograph. *California State Journal of Medicine*, August, 1912.

3. Ray. No Organic Change Caused by Moving Pictures. *Ibid.*, p. 230.

4. Standard Encyclopedia.

tain distinct comfortable sight. Either the sight acuteness, endurance and comfort can be maintained under these adverse conditions or not. If not, unpleasant symptoms result, which can be attributed, in the functionally perfect sight mechanism, to fatigue or its accompanying vascular changes.

Among the symptoms which have been attributed to moving pictures are:

1. Redness of conjunctiva and lid.
2. Lacrimation.
3. Fatigue: Muscular, retinal and ciliary.
4. Pain of varying intensity in and about the eyes, including itching and burning.
5. Headache.
6. Dizziness.
7. Blind-spots.
8. Electric Ophthalmia: Redness and swelling of lids and conjunctiva from exposure to intense illumination. It is occasionally seen in moving picture operators and actors, and subsides in a few days.

The effect of the moving picture on the eye depends upon two things:

1. The moving picture.
2. The eye.

Among the moving picture factors which influence the effects on the eyes are:

1. Film: Speed and character of motion portrayed, distinctness, color values, actual colors, contrast, focus, condition.
2. Projection: Mechanism, lens focus, intensity and variation of speed, illumination, regularity, and condition of lenses.
3. Screen: Reflection, distortion caused by angle formed by line of projection with observer's line of sight, size of picture and character of action portrayed.
4. General Conditions: Ventilation, general illumination, comfort and other entertainment.

The eye factors involved are:

1. Sight Mechanism: Keeness of sight, energy required to maintain maximum sight and endurance, binocular fixation, and interpretation of pictures.
2. Position of person in theatre: Pictures are least tiring when viewed from thirty to one hundred feet from the screen. Distortion is increased with the angle formed by the line of projection and the line of the observer's sight.

3. Method of viewing pictures: Any person can tire the eyes unduly by riveting the eyes and attention on one object on the screen for even three minutes. For minimum fatigue, one should view the picture as a whole with eyes relaxed as much as possible, and should either close the eyes or look at something besides the screen every few minutes. Persons with very sensitive eyes may require light-colored glasses because of the great illumination and sharp contrast. Musical or other varieties of entertainment rest the mind and eye, sometimes.
4. Mental effect: Generally speaking, moving pictures are more or less restful. The looking upward, slight illumination, and restful comfort tend to make one sleepy.
5. Decreased winking.
6. Personal equation.

With the vast majority who complain of unpleasant symptoms following moving pictures, under favorable conditions, the eye is more often at fault than the picture. Refractive errors, muscle imbalance, defect of vision or fixation, or disease, increase the difficulty in maintaining a maximum distinctness, endurance and comfort. The moving picture is, under favorable conditions, a slight sight test, and often attracts attention to preëxisting ocular defects. If the eyes cannot stand the test, unpleasant symptoms result. A person with normal eyes should be able to view at least four sittings of moving pictures, properly presented, per week, with no discomfort or ill-effects.

Many pictures are not presented under the most favorable conditions. Indistinct, worn or scratched films, objectionable screens, poor projection, variable, too bright or dim illumination, and inexperienced operators produce pictures which will cause unpleasant or even injurious effects in any eye, normal or abnormal. Any or all of the above causes greatly increase the ocular fatigue and cause unpleasant symptoms.

Nearly all of the objectionable features of the moving picture have been removed in the highest class theatres. The seats are comfortable; the indirect illumination is sufficient to be restful and still not make the pictures in too great contrast; the nearest seat is more than twenty feet from the screen; the line of the observer's sight is practically the same as the line of projection of the pictures; a proper temperature is maintained; forced ventilation is used; mechanical defects are eliminated from the projector; only perfect films are used; the screen has no unpleasant reflexes; the pictures

are projected at a proper and uniform speed; intervals are given between the pictures, in which no pictures are shown, and in which other entertainment, such as music or vaudeville, is offered, and there are no oblique seats in the house.

CONCLUSIONS.

1. Moving pictures under favorable conditions do not cause as much fatigue as the same period of concentrated reading.

2. Under unfavorable conditions, moving pictures cause increased fatigue which, if continued, produces symptoms that are unpleasant and may be harmful.

3. Most persons who complain that moving pictures cause ocular discomfort have some ocular defect.

4. Moving pictures, under favorable conditions, act as a slight test of distant eye endurance. A person with no defect of the sight mechanism should be able to enjoy at least four sittings of one and a half hours each per week with no discomfort.

5. By staring fixedly at one object on the picture for a prolonged time, fatigue is greatly increased and unpleasant symptoms are produced. A person should not stare at any one object, but should try to look at different parts of the screen, and should either close the eyes or look about the theatre for a few seconds about every five minutes.

6. Every person has an individual standard of eye endurance. When your eyes become fatigued in a picture theatre, leave.

7. A review of the literature to date records no permanent harm to the eyes from moving pictures. The fact that ten million persons enjoy moving pictures daily with no definite reports of specific harm or injurious effect, and with but few complaints of slight inconvenience, proves that moving pictures, as presented at the average theatre, can have no injurious effect upon the eyes.

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4. Risley. Effect of Moving Pictures on Eyes. *Ibid.*, p. 228.
5. Ray. Eyes and Moving Pictures. *Ibid.*, p. 231.
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A CONTRIBUTION TO THE TREATMENT OF PELLAGRA.*

By ARTHUR A. HEROLD, M. D., Shreveport, La.

The modest title of this paper is prompted by the fact that the writer could not justly lay claim to having discovered a specific, when he has but five cases to report, treated by his original method. But the results have been so striking and the improvement so rapid that, I feel, to fail to give publicity to the treatment, so that others may profit thereby, and thus, perhaps, aid some unfortunate victims of this dread malady, would be a dereliction of duty on my part.

I feel that whenever we can replace an empirical treatment by one sound in theory and successful in practice we should not hesitate to do so; especially should this be the case when the empirical treatment is often overdone and thereby causes harm, comparable, in its evil effects, only with the disease itself. I am referring now, of course, to the medicinal treatment of pellagra with the arsenicals. Why, I have seen several cases of improving pellagrins get *rapidly* better of their troublesome symptoms when I had them to do nothing more than omit their Fowler's solution or cacodylate of sodium. I know that I am treading on sacred ground, especially if I condemn salvarsan, but my results in the cases (all severe) in which I have used this drug, showing, as they do, a mortality of 100 per cent, I cannot refrain, with all due respect, from placing it also in the junk-heap of would-be "specifics for pellagra."

In the summer of 1916 I had a case of three years' duration which, for the first time, showed very troublesome symptoms, resembling an acute case, with the addition of the evidences of postero-lateral sclerosis of the cord. She would not nor could not eat the right food; arsenicals had been thoroughly tried and found wanting; she was getting weaker, and delirium had set in. I was in a quandary as to what to do. I realized that I had to supply her quickly with something that she lacked and which past experience, as well as the teachings of Goldberger and others, had convinced me must be in certain foods. It occurred to me that, whether this be the so-called vitamins of Funk or simply albumens or nitrogenous substances, it must be in unheated blood serum; and why could not the good results obtained in transfusion be due simply to this substance transferred? Furthermore, we know, from the investigations of Dyer, Bass and others, that the coagula-

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bility of the blood is lowered in pellagra; hence, blood serum certainly would *not* be contra-indicated, and might do much good along this line. Accordingly, with everything to gain and nothing to lose, I decided to administer normal horse serum intravenously. After two treatments the improvement was so marked that I gave her a third dose—all at two-day intervals. She improved in every way except for the central nervous lesion, and although this patient eventually died, her death being due, in part at least, I am sure, to the failure of the family to follow my dietary instructions, as I afterwards learned, still the temporary improvement was so marked that I decided to give the method a further trial. I have since used it on four cases, of which I shall give you a brief synopsis.

As far as I can learn from the literature, this mode of treating pellagra has never been advocated before. I claim for it only that it does in a few days what proper feeding takes weeks to do, and that it will tide over and markedly improve that very troublesome class of patients whose mouths are in such condition that feeding is almost, if not quite, impossible. My routine treatment now is to use a well-known firm's preparation of horse serum, chemically preserved, ready for use, supplemented with a lime salt, which not only aids in increasing the coagulability of the blood, but also tends to keep down the anaphylactic phenomena. We should always keep in mind the possibility of serum sickness, but I believe there is a tendency to exaggerate this danger. I have seen it, mildly, in one of my cases.

Case 2. M. D. came to my office June 19, 1916, with a classical, though mild case of pellagra of about six weeks' duration. Her local physician had been giving arsenicals and had advised her as to diet, but her condition remained about stationary. I administered 10 c. c. normal horse serum intravenously at once; she returned in two days for a second dose, apparently improved; this was given, followed by lime salts. The necessity of proper diet was then emphasized by me. Her husband came in on July 6 (to pay the bill), reported her as "all right," promising to notify me of any recurrence. To date I have not heard further from them.

Case 3. D. G. Called July 1, 1916. Patient in bed, with two-months'-old baby; been sick for two weeks. Marked case, with fever, stomatitis, diarrhea, skin lesions. Advised her as to diet and prescribed arsenic and quinin. Called back on July 5; found patient weaker, not able to chew and not getting or retaining sufficient liquids of right kind to do good. Ordered calcium chloride, grs. x, every four hours; administered normal horse serum, 10 c. c., intravenously, July 6, and again on July 8. Effects were marvelous. Did not see her again until July 16, when, contrary to my advice, she was sitting in the sun and "feeling fine." Shortly thereafter she went to work and has had no recurrence to date. She was carefully instructed as to diet.

Case 4. Mrs. C. M. H. was admitted to North Louisiana Sanitarium, February 6, 1917, with a history of having been "going down" in health for the past two years—emaciation, loss of appetite, etc., but with pellagrous symptoms of less than three months' duration. She had received some hypodermics of cacodylate of soda, and attempts had been made to feed her along proper lines, but she had grown progressively worse. When I was called in, on February 9, she was in a muttering delirium, with subsultus tendinum, incontinence of urine and feces, with probably thirty bowel movements per day; her hands, feet and genitalia were ulcerated, the fingers so much so as to give one the idea that some of the phalanges were about to "rot off." Her tongue, gums and lips were like rare beef, and very ropy saliva was constantly dripping from her mouth, so that feeding, even with small quantities of liquids, was next to impossible. On February 9, 10 c. c. normal horse serum was administered intravenously; repeated on the 11th; on the 13th, 20 c. c. calcium lactate, grs. v, stirred in water, was given every three hours at first; later, every six hours. She was so much better twenty-four hours after the second dose that semi-solid food and plenty of liquids could be given freely. Treatment was later fortified with Blaud's iron and, when bowels checked (so much so that we had to give laxatives), strychnia was added. On March 4, or just a little over three weeks from the time that the serum treatment was begun, she was apparently entirely well and was told that she could go to her home in the country whenever any of her people should come for her, provided she lived on the right kind of food—which she had not done before. Last report from her, about one month later, was to the effect that she continued all right.

Case 5. L. J. consulted me in March, 1917, about her hands and mouth. Gave a history of a previous attack of pellagra; had been taking hypodermic treatment this year, without much, if any, improvement. As her case was mild and she lived in the country, I put her on Blaud's iron and lime salts, cautioned her about diet and told her to return when she could stay a while in the city. She returned improved in all respects except the skin lesions. I gave her two treatments of horse serum, 10 c. c. each, on April 4 and 6. I last saw her on the 13th, when she was all right, except for a mild urticaria on the face.

CONCLUSIONS.

1. If my experience is any criterion, practically all cases of pellagra will improve on normal horse serum administered judiciously, intravenously.

2. I believe that we would be justified in giving a good prognosis in all cases thus treated, except those that have well-developed lesions of central nervous system.

3. For reasons given above, it is advisable to fortify this treatment with a lime salt.

4. We should be mindful of the possibility of anaphylactic phenomena, but this probability is slight, and we can minimize the evils of serum sickness with proper medication.

Finally and in conclusion, let me stress the point that I do not believe that there is any specific medication for pellagra; that the good accomplished by medicines is simply from the tonic effect or as a result of combatting some intercurrent disease; that the procedure here advocated by me is nothing more or less than supplying the system safely, quickly and easily, in a few days, what it so badly needs—accomplishing a short cut, as it were—what proper feeding would do in a longer period of time, thereby conserving the patient's strength and considerably curtailing the morbidity.

(**Author's Note.**—August 8, 1917. Reports during past thirty days from four cases reported cured above are to the effect that all have remained well. Two other cases, treated along same lines, are doing nicely.—A. A. H.)

DISCUSSION ON THE PAPER OF DR. HEROLD.

Dr. D. W. Kelly, Winnfield: The giving of horse serum is something new. I have noticed, in the series of five cases he reports, he records one death—a mortality of about 20 per cent. I would not think that, to begin with, was very flattering in regard to results. It is my opinion that you can take the worst case of pellagra and, under sanitarium treatment, if you put him in a cold bath and feed him, he will improve. I do not believe 20 per cent will die if you give them sanitarium treatment under ordinary conditions, and nothing else. I do not believe the death rate from pellagra is that high. I, for one, believe, that we can get results from medical treatment in cases of pellagra. I believe we get results from the use of arsenic, but the arsenical treatment has been overdone. Since I have been here, one of my friends told me that he gives these patients salvarsan, and said he killed some of them. I asked him how much he gave, but he did not tell me exactly. In speaking of giving cacodylate of sodium, he said he gave $7\frac{1}{2}$ to 15 grains as the initial dose. I am not surprised that pellagrins died when they got that size dose of arsenic. Arsenic has killed pellagrins, and, considering the way it has been given, I think the medical profession would do better to go back to the Goldberger method and do nothing but feed them, rather than give them poisonous doses of arsenic. If you give it with the needle, you get results. I believe in the arsenical treatment of pellagra, and the proof of the pudding is in the eating. I have not lost a case of pellagra in over eighteen months. I certainly believe in the arsenical treatment of the disease, and for the last two years, in addition to arsenic, I have been using hydrobromate of quinin with good results. I have patients who are doing well under the treatment. There is absolutely no question as to the results obtained from arsenic and hydrobromate of quinin. I believe in diet. I believe in feeding these patients everything. If we knew more about dietetics we would give all our patients less dope.

Dr. H. W. Jarrell, Mansfield: I would like to ask the members of the Society what proportion of cases of pellagra we are having now as compared with two years ago?

About two years ago we had a meeting in Shreveport to discuss and thresh out the subject of pellagra. The subject was discussed pro and con. Dr. Goldberger's theory was jumped on, and various theories were advanced as to the treatment of this disease. At that meeting Dr. Morgan, of Keitchie, stated that in that year, or the year before, he had had 300 cases of pellagra. That same year (1915) I had about forty or fifty cases of the disease. Last year I had about five.

As to the treatment of pellagra, my course of treatment was largely that which has been suggested by Dr. Kelly—that is, following up the treatment of Dr. Dyer, and also using Goldberger's treatment of dieting the pellagrin. I found that my cases improved greatly on a course of treatment like that.

In view of the fact that a great many practitioners have adopted Goldberger's treatment by diet, and my experience having shown so many less cases in the past eighteen months, I would like to ask some one to tell me what they think about Goldberger's theory as compared with two years ago. Personally, at that time I never had any idea; I thought he knew what he was talking about; that it was the course to pursue, and I pursued it. My patients, or the majority of them, except the extremely advanced ones, got well from that line of treatment, and I made statements to my friends in Mansfield to the that effect. It was in 1915 we had so many cases of pellagra, about 95 per cent of my cases being negroes. The second year of the war they ate but little except black molasses and sour corn bread of sour meal. We had hundreds of cases. I remarked that I did not know anything about the real cause of pellagra, but I said, "If you watch next year you are not going to see so many of the cases of this disease." In 1915 every one had an abundance of something to eat. Last year, as I have said, I had five or six cases of the disease come to my office. The year before I had from twenty-five to fifty. I believe the decrease in the number of cases is due to the course of treatment by diet. I have especially stressed diet to all of my patients and their families, and I think this has been done by all earnest and enthusiastic physicians, the lay press and periodicals.

Dr. Herold (closing): I purposely asked my friend, Dr. Kelly, to open this discussion, because I expected to get a roasting, and I knew he would prefer the arsenical treatment, especially salvarsan.

I wish to refer to the case of the woman who died after being filled with arsenicals. She got into such bad shape that her central nervous system was involved, and, although she improved for a while on other treatment, she did not get well.

As to Dr. Jarrell's question, we all agree that, with the education of the people along dietetic lines and in the last two years having had pretty fair food crops, pellagra has markedly decreased, verifying the opinion, to some extent, of the public health service.

THE FREQUENCY AND EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS IN CHILDHOOD.*

By JOHN SIGNORELLI, M. D., New Orleans.

Tuberculosis, probably the most widespread of all diseases which afflict the human race, respects no sex or age in the selection of its victim, and its universality is as flaring in early life as it is at any other period. Indeed, scientific research and investigation have long since proven that, whether we accept the hereditary theory of Baumgarten or we admit the aërogenic or enterogenic theory of infection, the fact remains patent that it is not only an infection, but a real disease of childhood. Evidence in this matter, collected independently by various observers, is of a striking nature. Autopsy findings disclose a rise in frequency of from 15 per cent in the first year to 70 per cent in the twelfth.

The disease is as general in its distribution of lesions in the human organism as it is widespread throughout the human family. no organ or tissue is immune to its attacks, and each presents a picture independent of the other.

Up to within the last decade the subject of tuberculosis in children, especially in text-books, was generally dismissed with a hurried explanation that the diseases in this period of life was limited chiefly to bones, joints, lymph nodes, and seldom, if ever, was it met as a pulmonary condition. But the advances made in pediatrics in recent years have taught us to turn to the view that the respiratory tract is principally affected. Hamburger, Harbitz, Holt, Dobbie and Wollstein and Bartlett have independently and at different periods reported conclusions based on autopsy study of several hundred cases of tuberculosis in children, which have shown that the lungs and bronchial glands are far more often involved than any other tissue. Thus, quoting the above authors, we learn "that the lungs are the organs most often affected, next are the bronchial lymph nodes, spleen, pleura, kidney, brain, intestine and mesenteric nodes. The lungs and bronchial nodes are the most frequent seat of disease in early infancy, and death, as a result of pulmonary processes, occurs most often in the first two years of life."

Accepting, then, the results published by these men, it is astounding to see how seldom pulmonary tubercular lesions in

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children are diagnosticated in the clinics as well as in private work, and more especially is it strange as to how rarely one sees a certificate of death bearing such a diagnosis. And, indeed, it is upon this point that the writer wishes to make an appeal, in the hope that we become more awakened to the possibility of its existence, and by its early recognition save not only our embarrassment in the later development of an advanced case of pulmonary tuberculosis, but, by the institution of proper management, save probably the victim's life and certainly, by proper prophylactic measures, prevent a further spread of the disease to other members of the family and the community.

While a discussion of the various clinical and pathological picture of tubercular infections in childhood would be instructive as well as fascinating, the time allotted and the title of this paper preclude any such wide discussion, and the writer shall, therefore, limit himself to a strict discussion of the pulmonary type. These, in order to facilitate their comprehension, will be classified into three groups, after the plan of Dr. W. J. Dobbie, whose experience is wide and conclusive, namely:

- (a) Acute miliary tuberculosis.
- (b) Acute caseous tuberculosis.
- (c) Chronic fibro-caseous tuberculosis.

The first type, while most usually generalized, frequently presents cases in which the disease is confined almost entirely to the lungs, and is responsible for about 10 per cent of deaths caused by tuberculosis in children, affecting, most often, young infants, and presenting a sudden onset and rapid course.

The second type, or acute caseous tuberculosis, is the commonest form of pulmonary tuberculosis in childhood, occurring as a sequel to measles, whooping-cough, broncho-pneumonia or any of the infectious diseases. Its onset is sometimes sudden, but more often it is gradual, with anorexia, *malaise* and wasting quite out of proportion to the primary condition. The temperature continues above normal, and the cough, instead of diminishing, assumes a violent, distressing character, with a rather copious expectoration, in which the tubercle bacillus cannot be demonstrated. As most of the sputum is not expectorated, but swallowed, these little patients suffer from a concomitant gastritis, or gastro-enteritis, with vomiting and loose bowels.

The importance of early diagnosis in this type of disease is at

once obvious, for even then the prognosis, especially in the younger children, is extremely grave.

The third or chronic type of pulmonary lesion in children is not found under the fourth year of life, and rarely before the sixth. The clinical course and physical signs are similar to those found in the adult, and, with the usual tests and a careful examination, diagnosis is not difficult, if one bears in mind the differentiation of other causes of cough.

DIAGNOSIS.—Clinically, the diagnosis of pulmonary tuberculosis in children is always a matter of considerable difficulty; to the inexperienced, the beginning resembles mostly the picture so frequently accompanying other acute infections. This is due to the fact that the disease in its acute form is always either a tuberculous broncho-pneumonia or a part of a generalized infection, in both of which the severity and rapidity of its course are such as to throw the physician off the correct trail, unless he be ever on the alert for its possible occurrence. One should always be suspicious in every case which clinically runs a course not especially indicative of a known condition, remembering the danger of lightly passing over these cases, with a diagnosis simply sufficient to satisfy the anxious parents.

The family history, previous history, with special reference to the mode of alimentation in early infancy, and the environments must be scrupulously investigated.

Frequently these children have little or no cough, but an inexplainable difficulty with respiration, for which no physical sign can be found, ordinarily. They appear anemic, and often cyanotic, especially about the lips and cheeks, and there is a tendency to rapid emaciation—a condition to which Fischer has given the name, “pre-tubercular” anemia.

The chest examination shows the catarrhal signs and ronchi usually found in ordinary bronchitis, with absence of dullness and bronchial breathing in the earlier stages. Significance, however, is to be attached to the fact that these signs are located over areas relating to the hilum of the lung and toward the bases, and not up in the apices, as was formerly stressed upon. The disease may end rapidly with exhaustion, due to overwhelming of the system by the infection, or it may assume a protracted course, as so often happens following measles and whooping-cough.

There develop patches scattered over the areas above mentioned,

giving crackling râles, high-pitch breath sounds and perhaps a slight impairment of note or marked dullness, with bronchial breathing. The left lung, just below the angle of the scapula, also the inter-scapular spaces opposite the spinous processes, especially on the left side, are areas where early signs most often appear. Anteriorly, the third and fourth inter-spaces just to the left of the sternal border are the site more often giving early positive signs. The findings reveal, besides impairment of note and sharp crackling râles, also bronchophony and pectoriloquy over limited areas at one or more of the above points.

Too much emphasis has been laid upon the significance of sweating and the occurrence of hemoptysis in children. Sweating occurs quite easily in all children, especially when the general health is depressed, thus rickets, debility after acute illness, or anemia from any cause are sufficient to cause profuse night sweats. Hemoptysis in children almost always means whooping-cough, pulmonary congestion due to advanced heart diseases, or spurious bleeding from nares or gums; very rarely indeed does a child with pulmonary tuberculosis cough up blood, and fatal hemorrhage is so rare as to be negligible.

The importance of D'Espine's sign, in the experience of the writer, has not been what many claim for it, who consider it a pathognomic sign of pulmonary lesions. Indeed, he does not consider a positive D'Espine alone to indicate conclusively tuberculous lesions over the mediastinal nodes which produce it. As a corroborating adjunct, however, a positive D'Espine is valuable.

A careful physical examination of the chest should be made, with observation of the peculiar characteristics of normal sounds in the child's chest, where the thinness of the thoracic walls render physical findings easier of interpretation than in the adult, provided that the point be carried in mind *pari passu* with the examination.

The tuberculin skin reaction of Von Pirquet has been found by the writer to be a most valuable aid in all cases, and in the very young, under three years of age, it is of positive and conclusive value, for, during this period, a test which has been properly applied three consecutive times, and in each instance resulted negative, furnishes sufficient grounds to eliminate tuberculosis as a diagnosis, while a positive reaction during this period means positive existence of active tuberculous lesions, and if the chest shows

clinical signs our diagnosis is obvious. A positive result, after the fourth year, is not so positively valuable, however, for it simply signifies that at some time during the patient's life tuberculous infection did occur. As a corroborative adjunct, however, it is more valuable than the D'Espine sign at any age.

A positive corroborative factor is the X-ray examination of the suspicious chest, and to emphasize how valuable it is the writer will quote a case reported by Dr. Frederick H. Baetjer, of Baltimore, before the National Association for the Study and Prevention of Tuberculosis at their meeting of 1916, in whom the only clinical evidence was the occurrence of a hemorrhage. The most careful physical examination several times repeated failed to reveal any lesion. X-ray examination was recommended, and the radiologist reported a suspicious area in the left third interspace one-half inch to the left of the sternum. The patient was sent to a sanatorium and there kept under close observation, and surely, indeed, it was not long before physical signs did develop at the site previously pointed out in the X-ray picture.

The finding of the bacilli in the sputum is, of course, conclusive evidence, and this should be attempted repeatedly until the diagnosis has been clinched or disproved.

In the series of cases under the writer's observation in his clinics and private work emphasis has been laid upon a complete examination being made before a diagnosis is assumed, and it has been found that physical findings are the most important source of information. Next, in the order named, are the X-ray examination, which has never failed to corroborate a lesion found clinically, while in obscure cases it has often pointed out the way to a conclusion; the Von Pirquet test, applied as previously suggested, which has given positive reaction in about 85 per cent of positive cases, while in negative cases it has always failed to react (these figures apply to children under three years of age); D'Espine's sign, which has been present in about 80 per cent of the positive cases and absent in about 20 per cent, while it has been present in about 15 per cent of non-tuberculous cases.

The isolation of the bacilli has purposely been left for last, as it is the one absolutely indisputable sign.

Finally, it must be remembered that one mode of examination should never satisfy the conscientious physician, even though it might appear conclusive, but it should be corroborated by every

other known means; and so, too, one single complete examination should be considered insufficient unless the means employed corroborate the diagnosis beyond any doubt.

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DISCUSSION ON THE PAPER OF DR. SIGNORELLI.

Dr. G. Farrar Patton, New Orleans: I do not need to emphasize the value of the paper we have heard, and there is no man in this State better qualified than Dr. Signorelli to present such a paper. He has modestly refrained from referring to his experience, but I can tell you that he has been for years one of the most active attending physicians in the out-clinic of the Charity Hospital, and, as I am Secretary of the Louisiana Anti-Tuberculosis League, I can say that Dr. Signorelli is one of our most faithful workers and is highly esteemed as one of our voluntary medical examiners.

It would be impossible to overstate or overemphasize the importance of the early possible diagnosis of tuberculosis in children, and whatever means of diagnosis can be made available it is the duty of the doctor who is responsible for deciding that matter to make himself familiar with them and become expert in the exercise of them.

If you will pardon me for referring to an instance of the importance of this work, I will mention a striking example that occurred among patients of the Louisiana Anti-Tuberculosis League sent to our camp known as Camp Hygiea, in St. Tammany Parish. In the first few years after the establishment of that camp we received a widow and two children left by a man who was a member of the Woodmen of the World. The attention of the League was accidentally directed to this family, the father being discovered in a dying condition. Our district nurse attended that man faithfully, giving the family the benefit of her experience and advice, and after his death she strongly urged the widow to come to our Free Clinic for an examination of herself and children. Having lived in close proximity to that advanced case, all three were found to be distinctly infected. They were sent to Camp Hygiea, and, while I do not remember exactly, I think they were there for five or six months. The results were brilliant, so much so that the numerous and influential order to which the dead man belonged has become one of our staunchest allies. We have at the present time among our guests—you can hardly call them sick people—in Camp Hygiea, one of whom is only five years of age, the youngest case ever sent there independently.

I am chairman of the committee that has charge of that camp, and for the information of our colleagues who may not be posted I will make a slight digression to explain that Camp Hygiea was originally started as an object-lesson. The State League teaches in its lectures and its literature that tuberculosis is easily curable, but in order to convince the people of the truth of such a statement it is necessary to show them,

So, at the very outset, we established, with the limited means at our command, a camp in the pinewoods in St. Tammany Parish, which has since been removed to the present site. We have a capacity at the present time of fifty beds, and those who are sent there are instructed by the medical staff of the service as to the curability of their cases. We are not prepared to take people in advanced stages of the disease, who might go there merely to die. The object-lesson would be defeated. Those who are interested in this work should avail themselves of the free facilities offered by that camp. There is no charge, even the laundry of the guests being paid for, but we ask you not to send us people who are in advanced stages of tuberculosis, who are running a temperature, have cavities in their lungs, and who would have to be kept in bed, because we have no resident physician. Our superintendent is one of the most remarkably talented women in the country. She is a highly trained nurse and can do all that a superintendent can do, but she is not a doctor. Our facilities do not permit us to take advanced cases of the disease. We all hope that the State Sanatorium planned to be located near this city will materialize in the near future.

There is nothing that Dr. Signorelli has written that does not concern every man in this audience. Not only for the credit of our profession, but for the great cause of humanity, and especially for the rescue of little children who cannot help themselves, let us be on the alert to discover incipient tuberculosis by the use of every method that science has placed at our command.

Dr. E. J. Cather, Oakdale: I would like to ask the doctor his views in regard to the serum treatment of tuberculosis. I ask this question because I have two children who have enlargement of the cervical glands. I gave them tubercle serum; shortly afterward the cervical glands materially decreased in size. In fact, the enlargement has disappeared, and the red blood count in ten days after giving this serum was normal. I would like to hear the opinion of some of the other members as to the use of serum treatment.

Dr. Wallace J. Durel, New Orleans: I am sorry I did not hear this paper, but I would like to say a word or two on the subject. The greatest factor we have to deal with at present, and it has practically been demonstrated clinically, is that tuberculosis in children is more frequent than we supposed in the past; also that tuberculosis in the adult is, in the great majority of cases, nothing more than a recrudescence of tuberculosis in childhood. In other words, the child is infected, and a latent tuberculous condition exists, generally in the glands or bronchial tree. The resistance in the child has been lowered to an extent which has been followed by a diseased tuberculous condition, and that is sufficient to complete the primary infection and to keep the primary infection within bounds until the child reaches adolescence or adult age, for then, the resistance being materially diminished and the tissue devitalized by environment and mode of living, he develops an acute condition. I believe the majority of cases of acute miliary tuberculosis we see are nothing more than a revival of an old latent tuberculous focus that has existed since childhood.

As to the question of what to do for these children, tuberculin treatment is not necessarily indicated. We must remember that the child of three years may have latent tuberculosis as well as active. The first thing to do is to find out if the tuberculous condition is either active or

latent. If it is active, then use the tuberculin treatment. On the other hand, if it is latent, the patient needs the hygienic treatment, with a little modification. I make it a routine to give the syrup of iodid of iron, and I have seen dozens of cases in which tuberculous glands, after a year or two, have disappeared. I had that occur in members of my own family. Where we find that the enlarged glands are not due to diseased tonsils or other conditions, but due to tuberculosis, and not to syphilis, give large doses of syrup of iodid of iron with the hygienic treatment. Then, if a more active and more aggressive treatment is indicated, give tuberculin itself. The point I want to emphasize is the marked intensity of the infection in some children, whereas the infection in other children is latent. Whenever it exists it may be modified one way or the other, but bear in mind that most adult tuberculosis is simply the consequences of tuberculosis in childhood.

Dr. George Dempsey, New Orleans: A paper of this kind ought to be encouraged by the Society. It gives us practical, every-day lessons, and I do not believe a discussion of half an hour by the different members of this Society would be any too much on an important subject of this kind. If Dr. Signorelli wishes to remain, I will be glad to have him do so, but otherwise he should be permitted to close the discussion.

Dr. Signorelli (closing): I want to thank Dr. Dempsey for giving me the opportunity to close this discussion sufficiently early to make my train schedule. In the first place, I want to thank Dr. Patton for his generous consideration of my paper.

The title of my paper would show that I did not deal with the subject of treatment. I had to generalize, more or less, in view of the limited time.

In answer to the question regarding serum treatment, we do not use the serum treatment. The treatment of active cases is usually referred to our camp, and, of course, when we once make a diagnosis of tuberculosis, the cases that go to the camp pass out of our hands, temporarily at least.

The important point I wanted to bring out was the making of an early diagnosis. I tried to show that there was danger in passing over cases which come to us and which led us to make a diagnosis of bronchopneumonia, grippe, lung, or growing too fast, etc. All of us have been guilty in the past of making such diagnoses, simply with the hope that the family would be satisfied, but this is not satisfying to our own consciences.

As Dr. Durel has pointed out, the vast majority of cases of tuberculosis in adults can be traced to infection in childhood. A good many cases of active tuberculosis, miliary tuberculosis, generalized tuberculosis are diagnosed accurately, but the disease passes away undiagnosed in far too many children.

FEEBLE-MINDED.*

By JOSEPH A. O'HARA, M. D., New Orleans.

In a broad sense, the word mental deficiency is as applicable to a mental decay as it is to a mental non-development. But, when it is used in the strictest sense, it should be restricted to that mental state that has never developed. Esquirol, in defining the difference between the demented and the feeble-minded, says that a "dement" is a man who is deprived of the goods he formerly enjoyed; he is a rich man who has become poor; but the idiot has always lived in misfortune and poverty, or, in other words, the idiot, imbecile and feeble-minded (including the Moron, from the Greek word meaning fool) have always lacked something that the dement once possessed.

The Royal College of Physicians in London defined the feeble-minded as those persons in whose case there exists from birth or from an early age mental defectiveness not amounting to imbecility, yet so pronounced that they require care, supervision and control for their own protection or for the protection of others, or, in the case of children who, by reason of such defectiveness, appear to be permanently incapable of receiving proper benefit from the instruction in ordinary schools.

The American Association for the Study of Feeble-mindedness adopted the following: "The term feeble-minded is used generally to include all degrees of mental defect due to arrested or impaired mental development, as a result of which the person so afflicted is incapable of *competing* on equal terms with his normal fellows, or *manage himself* or his *affairs* with *ordinary* prudence." It classifies the feeble-minded into three groups of *mental* age:

Idiots, whose mental age is *below* three years; imbeciles, whose mental age is between three and seven years; morons, whose mental age is between eight and twelve years.

The "Mendelian" law has definitely established that the offspring is not intermediate in type between its parent, but that the type of one or the other parent is predominant. According to this law, a hybrid is an animal or plant bred from two species—that is, if two well-defined varieties of the same species be cross-fertilized the resulting *hybrid* offspring will show only the distinguishing characteristics of *one* of the parents, and this is termed the "*dominant*

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characteristic," whilst the characteristic of the other parent is only dormant or latent, and is known under the name "recessive," and it will appear in the next generation of the hybrid.

From this, then, we may calculate the following: That both parents being healthy and free from any neurotic taint, the offspring must be healthy, but if one of the parents suffers from a neurosis, chronic alcoholism, epilepsy, syphilis, consanguinity of parents or some possible poison (lead, etc.), the nervous system will be less durable and more unstable; but if the taint is not too extensive or deep-rooted, a few generations of healthy mating will eradicate this defect, whilst the mating with neurotics will develop offsprings who are absolutely defective.

When we attempt to decide the etiology of the different groups we should remember, first, what is the cause of the defect?

Is it the result of the absence of some element in the germ plasma? for it is here we find the true hereditary type; or is the result of injury to the child, intra-uterine, or during delivery of the child?

Kraipling, in his latest edition, says that a great number of cases of feeble-mindedness are the offspring of cases of dementia precox (known or unknown), whose predominant symptom is only dementia.

Again, investigation by Myerson of the study of the family groups also show some interesting data on heredity—that alcoholism or epilepsy in the male subject means an offspring who will have a resulting neurosis, whilst alcoholism and epilepsy in the female means an offspring who may develop not only some mental deficiency, but probably be a psycho-neurotic or an epileptic.

It is now conceded that injuries or some exhausting disease of the mother during the period of intra-uterine life of the child will result in that form of feeble-mindedness especially known as the Mongolian type. While some of the authorities claim syphilis as the greater cause, particularly of this form, still we find a great number of cases where "lues" can be positively eliminated.

On the other hand, conclusive proofs have been established that, during life in utero, some degeneration or deep-seated uterine disturbance is the greatest cause. Investigation has shown that the greatest number of the Mongolian type are found amongst the last of the children born, and that it is the exception to find them amongst the first-born, and that it is *congenital*, and not hereditary, in a true sense.

During extra-uterine life, feeble-mindedness may be the result of partial asphyxiation, injury by forcep, prolonged pressure, infectious disease or direct injury to the child itself, causing hemiplegia or diplegia.

Looking at it from another angle, we have the children born of illiterate parents who develop stigma from unsanitary environment, physical diseases or faulty methods of training. These become mental defects, dull or retarded.

In this class we find the social and economical burdens of uncomplicated feeble-mindedness.

By reference to the admirable deductions made by Victor Hugo in that portion of his writing of "Les Miserables" devoted to the study of the street gamin, we find that he was writing not only of Paris, but of New Orleans and all large and small cities of the world. He refers, not to the city and its street children, but to cities and their street children, when he says, "To depict a child is to depict a city."

He continues to write:

"All anarchy is in the street child. He lives, develops, gets in and out of scrapes—a thoughtful witness, amid suffering, of our social realities and our human problems. He thinks himself careless—but he is not. He looks on, ready to laugh, but ready for something else also. Whoever ye are who call yourselves prejudice, abuse, oppression, iniquity, despotism, injustice, tyranny—beware of the gaping child of the street. This little fellow will grow."

He will grow; but how? He will grow along the lines of least resistance. He will choose that pathway that runs where he will be able to let his undeveloped mind wander wherever it will not be under burdens of government, control, anxiety, worry, cares or responsibility. He is shiftless, careless, destructive, incorrigible, ironical and insolent at times, all depending upon his environment.

All crimes of men begin in the vagabondage of the child, and it is this vagabondage of the child, under proper educational environment, that becomes lost in the men. For the child of the street may be the child of destiny.

In referring to mental defect of the most *profound* degree we find a subject whose chief characteristics are his inability to appreciate the physical danger which threatens his daily existence, his inability to perform labor of any kind, be it for himself or others, no matter how essential it may be to his own future well-being.

He is one not capable of caring for his bodily necessities; he will refuse to wash or dress himself. Some subjects are of such a low grade that they do not seem to appreciate the pangs of hunger or thirst until food or drink is supplied to them, whilst others will even refuse these necessities when it is supplied. Some subjects are capable of pronouncing a few simple words, but they are mostly of the guttural type, and are drolled out from a feeble voice.

These forms have been divided by Tredgold into the *incomplete* and *complete* types, the incomplete being those who feel, appreciate and realize some of those essential elements which go to make up life's history, and who, under competent training, can be made to accept some of their own responsibilities, and it is this form, under competent training and supervision, that can be made useful and able to perform some manual labor whilst under surveillance. It is remarkable, in this incomplete form, to see the metamorphosis that can be accomplished against such odds. Imprisoned within their disturbed, restless and misshapened bodies, cut off from all that would make them happy, and all the essence of childhood, there is a mind which is crying out to us to be set free.

But in the complete type, where there are no evidences of any organic instinct, these individuals lack the powers of attention, and for this one reason alone cannot be taught labor of any character. These are the dependent mental defects, and it is this type in particular that eventually becomes an institutional case.

But a greater number of these unfortunate cases, especially the high-grade imbecile, being without any restriction, he becomes inoculated with wanderlust, and in this way sacrificed and abandoned to a kind of a fatal immersion in public crises which devour in him his honesty, conscience and pride in his whole inner self. We find him here a plaything and a pawn in the hands of the well-trained criminal; he delights in his associates, whose company he eagerly seeks, and we find him *not a mental bankrupt*, but a distributor of venereal disease and a perpetrator of petty crimes.

Through this channel he becomes a frequent inmate of the Parish Prison and House of Detention, and here he again comes in contact with the criminals of the highest grade. Easily led, he is prone to all evil habits; he becomes an alcoholic, or an addict to cocain, morphin, heroin and associated narcotic drugs, prone to lie without reason and lie when the truth would be more beneficial; he is expansive in ideas and morally insensible, and can differ-

entiate in the abstract only as far as he is personally interested, but, when it comes down to practice, he is unable to differentiate between right and wrong. He is bombastic, and shows no embarrassment or shame about wrongdoing, and *never* shows any sign of remorse; correction or punishment has no effect. Thus he becomes a menace to society, finally ending in an institution, to be forever an expense to the community.

The prevention and cure of insanity has been neglected in this State to such an extent that it has caused an eclipse whose shadow overpalls all of our other good deeds.

When we look around for methods for the correction of feeble-mindedness we find that the field of mental hygiene is so broad and extensive as to suggest no probability of success, but any attempt to correct this condition in Louisiana will be a march of progress in the right direction. What work is now being done, fortunately, is under the surveillance and attention of well-trained men who, working along the lines of false economy, are just able to make ends meet. I say false economy, because the care and maintenance of the insane is a responsibility that has reacted on this State through neglect in the protection of these insanes, when they could be converted into human beings at a profit to the State. The proper care and protection of these unfortunates is one of the most successful financial propositions ever undertaken by any State, besides being one of the noblest monuments that any country in the world can point to with pride.

Unfortunately, when a sufficient appropriation is asked for, the authorities chop it to pieces in favor of other public purposes which are given the preference, forgetting that the care of the insane is the care of a man, not a beast. The time is now ripe for the medical profession to at least stand up and demand that these institutions receive the proper support and care. We have commissions for the control of the boll-weevil, eradication of the tick, foot and mouth disease, protection of shellfish and wild game, hookworm, and God knows what else; but we have no commission that is intended to *modify* or *control* this vast social, moral and economical force represented by the feeble-minded persons at large in this community. We should begin at once by seeing that the constituted authorities adopt methods for the prevention of mental abnormalities—by segregation and sterilization of defectives and degenerates, and supervision of marriages, of tubercular and

syphilitic subjects, also alcoholics, drug addicts and cases of heredity and consanguinity, and by early education to correct mental defects. Beginning in their early years, you can find the level of their adaptations to their situation in life and fitness for occupation, for we must realize that life is a process of adjustment and education.

Through the general practitioner, he giving to the family sufficient early knowledge and showing to them the defects in the child, for it is in the early youth we find the best chance for progress and advancement.

The establishment of psychopathic clinics in every hamlet of the State, where these cases will and can seek early advice and treatment, and also where the family and friends can receive institutional training and hints for the guidance and early treatment of cases at home, should be advocated. Such service can best be rendered through an out-patient department of a hospital for feeble-minded, where facilities for the exhaustive study and treatment will be accessible for special cases, and by receiving borderline patients for early observation, prevention and treatment.

Educators, charitable agencies, institutions and juvenile courts should be shown that it is mostly some mental defect or mental disease that is the primary cause of the backwardness in school and of delinquency and crime.

The underaverage child, who does not profit by the usual course of study, should be turned over to special schools and special teachers, for their presence in schools has a great tendency to retard the advancement of the normal child.

Great strides have been made in the study and care of the feeble-minded in twenty-one States in America, as follows: California, Connecticut, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New York, New Jersey, Ohio, Pennsylvania, South Dakota, Washington and Wisconsin. Up to a few months ago the absence of the name of Louisiana was noticeable. But, through the forethought of the executor of the will of that most benevolent and charitable woman, Mrs. Sophie Lengsfeld Gumbel, who left \$50,000 to be used for charitable distribution, Messrs. Henry Lester and John Gumbel, after careful consideration and investigation, used the above sum (\$50,000) for the founding of an institute for the feeble-minded in New Orleans. This is the first institute of its kind in

our State, for which we and the whole State of Louisiana should be proud.

DISCUSSION ON THE PAPER OF DR. O'HARA.

Dr. R. P. Evans, Shreveport: It has given me great pleasure to listen to such an admirable paper as Dr. O'Hara has just read. He has covered fully the most salient points in regard to feeble-mindedness, and it would be useless for me to enter upon such a broad subject.

He has brought out a point that should interest us—namely, that we should try to weed out the feeble-minded in different schools, prisons and hospitals and place them in proper institutions for future training. The State has not made any such preparation for this class of patients. It is true we keep them in State institutions, such as the one here and the one in Jackson, but there should be special schools, special institutions, for handling these cases. There should be farmwork for them, and it is the duty of the physicians of the State to get together and help out in the work that is being done along this line at present. While it is in its incipency, we can be of material assistance in trying to secure better facilities for handling these cases when they are brought to us.

Dr. Thomas E. Wright, Monroe: I wish it were possible to have this paper in the hands of every responsible layman in the State. It is of especial interest to us; we note in it a keen simplicity and a strong appeal for a firmer moral force in the State which will offset the tendency to feeble-mindedness. The author impresses upon us the importance of a keener intelligence on the part of the average doctor as regards mental and nervous diseases. I am disposed to repeat here what is already well known—the average doctor knows very little about two diseases: skin diseases and mental diseases. To the average doctor, a man is insane or he is not insane. We are getting to appreciate that there are many different stages between the normal mental state and the insane person. We are coming to believe that the coroner and the judge should be as near expert in the line of mental disorders as possible. This would be of vital assistance in the handling of these cases.

Every loyal doctor will agree with the author about the need of greater help in this State for this class of patients. It is to be hoped that our present administration will be able to finance sufficiently these institutions for the proper handling of the feeble-minded and insane. The average politician, as well as the average layman, must have a keen appreciation of the needs of this class of patients.

I mention with pride the work being done at the Louisiana Training Institute in Monroe. We have here a number of wayward fellows so well pictured in this particular paper. Without doubt a large percentage has a degree of mental defect responsible for this waywardness. The type of work being done in this particular institution for this class of boys will certainly result in straightening out just those defective mental traits and will give to us a substantial percentage of its output in honorable and hardworking men.

The need of this type of intermediate institution, wherein the beginning mental defect as well as those of intermediate degree can be treated and cured, is appreciated by every intelligent doctor in the State. A general concert of action on the part of the physicians, together with leading citizens and politicians, will ultimately result in the establishment of just such institutions right here in Louisiana.

Dr. Roy M. Van Wart, New Orleans: Education ought to be adapted to the requirements and capacity of the individual. Our school system makes no attempt to do any more than to put the average boy or girl through a certain machine. I believe, regarding the question of feeble-mindedness, we need an educational system that is adapted to the requirements of the individuals, and the problem of feeble-mindedness and education along certain lines is a problem of the State. The State takes care of the average individual and of the individual who is not up to the average. Schools are not adapted to the conditions of the community in which the schools are situated. In other words, a school education that is adapted to make stenographers and bookkeepers is not adapted to a farming community. The farming community should be a part of the school system, no matter where it is. In a manufacturing industry we should take into consideration the education of the younger individuals growing up.

Dr. J. N. Thomas, Pineville: I have listened with a great deal of interest to the paper of Dr. O'Hara and the discussion of Dr. Van Wart. I fully agree with him in regard to feeble-minded people. There are two angles from which to view this question—the one of theory and the other of practice. In theory it is a fine thing for the State to take hold of this question, but practically it is almost an impossibility. In some of the great States of the Union the largest items in the budget of expense is appropriations for insanity and the feeble-minded, notably so in the State of New York. I venture the assertion that if the State of Louisiana would appropriate one million dollars for the erection of buildings and the establishment of a colony for the feeble-minded, in five years' time there would not be a vacant room in the institution. You could establish a chain of buildings from the Mississippi River to the State of Texas, and, if well maintained and managed, you would fill them up in the course of time.

The question with reference to lessening the number of cases of insanity is enormous. The law of eugenics would be the first consideration. I believe that when you can stop the propagation of the species we will not continue to have weak-minded people and the large increase in the insane. The proper method, as we all know, would be castration and ovariectomy. If those operations were done for three generations I believe that feeble-mindedness and insanity would be decreased 50 per cent. I believe such a law has been passed in two States—namely, Wisconsin and Indiana. Another question: if the use of alcoholics, as brought out in Dr. O'Hara's paper, produces neurotic children and epileptics, then whiskey should be abolished—all alcoholics should be abolished. I thoroughly agree with him in that. My idea would be, if it can be done, to castrate men and take out the ovaries in women and stop whiskey.

Dr. Roy M. Van Wart, New Orleans: A law has been passed in one of the States to the effect that no person can be discharged from an institution for the insane or feeble-minded until that person consents to an operation which will sterilize him or her as the case may be. This operation consists in the resection of the Fallopian tube and the resection of the vas deferens in the male. The law has been carried out on 600 people at the present time, with no fatalities. You can readily understand the possibility of the propagation by these people. But another practical problem is, what are we to do with those we have? In the present state of knowledge, we are at a tremendous cost to take care of

them, and the sooner we realize its importance the better. The question must be one of education on the part of the doctor, in the first place, and, in the second place, the doctor must educate the people in the community in which he lives. The responsibility for this rests upon the medical profession. Our Representatives and State Senators should be educated along these lines. A campaign of education is very essential before we can expect to accomplish any of those things which are taking place in other States. The doctor must realize he has a duty to perform, and to perform that duty it is very essential for him to be in a position where he can approach State Representatives and State Senators and have them do the rest.

Dr. O'Hara (closing). I want to thank the gentlemen for the interest they have taken in my paper. My whole idea in writing this paper was to try to stimulate thought and effort which would eventually lead to some useful purpose. There are high-grade imbeciles in our institutions who are able to make shoes, etc., and do a great many other things. We also know that there are hundreds and thousands of feeble-minded who, if they were turned out on farms, could raise enough produce to supply the whole world with continued food stuffs. Approximately 500,000 high-grade imbeciles in the United States could be turned into high-grade, first-class farmers and feed the world, and the people of Louisiana and of other States need never be afraid of starving to death. That is one great advantage they could be educated into, if nothing else. The only way to stimulate people to become interested in those who are feeble-minded is by interesting our Representatives and Senators, impressing upon them the importance that this has got to be done. Right here in this institution at Pineville, where the best of care is taken of the inmates, Dr. Thomas does not receive one part of what he should receive for the care of these individuals. Let us take those cases of feeble-minded that sat on these benches this morning and the other grades of idiocy, put them in the feeble-minded class, and let them work, and you will be able to make this institution one of the biggest in the world. Take any institution where the inmates are put on that basis and they will prove valuable assets, the same as they ought to do, in any State, no matter whether it be New York, Wisconsin or any other State. Louisiana could do a great deal more than it has done for this class of individuals if the appropriations were larger. To accomplish much good in this direction requires considerable money—yes, millions of dollars. With adequate financial support we could control, to a great extent, the spread of venereal diseases, which leads ultimately to insanity. It is necessary to take these unfortunate individuals and put them on proper planes of advancement, otherwise they are bound to follow the lines of least resistance unless curtailed. Let us have a million dollars or more to spend in connection with this work, to put up buildings, to improve the environment of these people, and either prevent or curtail the spread of syphilis, and, maybe, post-syphilitic conditions. As medical men we stand up for preventive medicine, and insanity can be prevented in 90 per cent of the cases if taken early.

THE TOLERANCE OF THE SCROTUM FOR FOREIGN BODIES.*

By PAUL J. GELPI, A. B., A. M., M. D., New Orleans.

The tolerance of human tissues for foreign bodies has long been recognized. We have all had examples of splinters of wood, needles and bullets which have remained in the tissues for an indefinite period. Our knowledge of asepsis teaches us that this can only occur, provided either there has been no admission of infectious material or that phagocytosis is able to overcome the infection. Nature covers the strange body with a protective fibrous coat. The correctness of this conception has made possible the wiring of bone, the use of Lane bone-plates, the Parham-Martin metal bands and other such ingenious surgical devices. It has also paved the way to the successful transplantation of vulcanite, silver, celluloid, etc., in the scrotal tissues for cosmetic as well as psychic effect.

Man is essentially a sexual being, and is very proud of his virility. It is for this reason that any disturbance of function or any deformity, whether congenital or resulting from disease or surgical exigencies, exercises a profound influence on his mind and makes of him a confirmed neurasthenic. Such considerations, no doubt, have prompted the replacement of testicles by artificial ones.

The collection of cases which follows shows that the literature on testicular prosthesis is scanty. We have only been able to collect fifteen reports of cases, including my own. We note that, with one exception, the technic of operation is the same. The scrotum is incised on the dorsal surface, and the vaginal tunic is opened. The artificial testicle is inserted; the tunic and skin are sutured separately. Preference is for smooth bodies. The variety of substances used demonstrates the high degree of tolerance of the scrotal tissues; they include silver, paraffine, vaselin, silk, celluloid, vulcanite, rubber, plaster and marble.

Hermance (E. M.) was the first to report the successful introduction of an artificial testicle. The operation was performed in 1885, and the report of it appears in the *Amer. Journal of Insan.*, 1894-95. This was done for the relief of morbid mental condition in a monorchid. Man, 21 years of age, with a congenital left undescended testicle, which could not be brought down. An in-

* Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18 and 19, 1917.

cision two and one-half inches long was made on the dorsal side of the scrotum and the vaginal tunic was opened. A silver testicle was inserted and the wound healed aseptically. He further states that no complications have followed and the testicle has been worn without any ill results and no interference with virility.

Weir (R. F.) reports three cases in which he replaced the testis by artificial bodies. The first was a young man with tuberculosis of both testicles. One was removed and a celluloid testicle substituted. The other was scraped. He remarks that two years later the man's mental condition was satisfactory. Case 2 was similar to Case 1. The third case was a man 65 years old on whom double castration was performed and artificial testicles inserted.

Guiteras (R.) reports an interesting case of introduction of an artificial testicle. Man, 32 years old, had congenital undescended left testicle, which was brought down by operation. It became inflamed and it slipped back to its original position. This necessitated its removal. Scrotum was incised over site of old cicatrix and the tunica vaginalis was opened and a sterilized celluloid testicle was inserted with good result. Reference is made to this case in his book on Urology, 1912. He says:

"I operated on him fifteen years ago, making an incision through the front of the scrotum and inserting a mass of well-polished celluloid the size of a normal testis. I advised him not to have the other put in for a year or so. * * * One year later I saw the patient again. He had entirely changed from a tall, very thin and nervous individual to quite a robust man, thirty to forty pounds heavier. * * * A few years ago I put in the second testis."

Louneau reports two cases of testicular prosthesis after castration for prostatic hypertrophy. The idea was to give the patients the illusion of the persistence of their virility. The material used was small ovoid masses loosely plaited into the form of the seminal gland. One was negligently inserted in the extra-vaginal layer and was badly tolerated. Finally it caused irritation, which led to its expulsion. The author notes that at first they remain soft and pliable, but later, owing to the absorption of organic salts, they become hard and feel like small stones.

Guelliot reports the case of a young man of 35 who, at the age of 22, had one testicle removed for tuberculosis, and now had to undergo castration of the other. He introduced into the cavities testicles of twisted and plaited silk. No complications. Perfect success.

Cartier reports castration of right testicle performed in a man

of 44 years. He had an artificial testicle constructed of silver, and which was subjected to rigorous disinfection. After total resection of the vaginal tunic he placed this testicle in the place of the suppressed testicle and sutured the scrotum. No drainage. After course normal. Ten days later the patient got up.

Silver artificial testicles are preferable to rubber, celluloid, etc. The latter kind, in the long run, can be attacked by local secretions. Besides, metallic testicles of a weight of about twelve grains are not easily drawn towards the inguinal ring by the retraction of corresponding part of the scrotum.

This man, operated June, 1895, has recently been seen. The testicle is quite mobile in the scrotum and is well tolerated. There is noted, however, an almost complete atrophy of the right lobe of the prostrate.

Trautner (H.) reports man of 20, bilateral castration. A year after operation, sterilized vaselin was injected with excellent results. At the time of reporting, the patient possessed his virile powers and suffered no inconvenience. The esthetic effect was good.

Carnabel reports a case of testicular prosthesis with paraffine, similar to that reported by Guinard.

Guinard reports the case of a man 27 years old. Right congenital inguinal hernia and testicular ectopia. Patient asked for artificial testicle. After operating the hernia, an incision was made in the right side of the scrotum, in which a mass of paraffin was introduced. After closing wound with catgut he dealt similarly with the right side. Suture of skin without drain. Paraffin with a high melting point (62°) was used. This is a "moral" testicle, but a prosthesis for the purpose of appearances.

Tuffier's discussion of this case is not uninteresting. Formerly he had used artificial testicles in many cases. Regarding some of these, he is unable to give any news, because he has not seen them again. Of those he has been able to follow, some had no accident, but the greater part had either some pain or else a small fistula, which has necessitated the removal of the foreign body.

In the same discussion, Regnier mentioned a case which he had operated twelve years before. He had placed "une olive œsophagienne" in the scrotum. No complications.

Burmeister (R.) operated on a man of 28. Left testicle extirpated for tuberculosis. Paraffin of melting point of 55° was properly shaped and introduced into site of removed testicle. No reaction, wound healed up perfectly and the results are good.

Picque (L.) refers to a few of the cases in literature of testicular prosthesis; they are included in the accompanying extracts. He mentions that Humbert, of Paris, used glass and plaster, and, Demons, balls of marble.

He reports a case of a man in whom a testicle had been removed in a radical hernia operation. An artificial testis of hard caoutchouc was made, and, after asepsis, placed in the scrotum. Two years later the man came to the hospital, asking that this be removed. He was possessed of an obsession to get rid of it, for some reason. On operation, nothing was found and the artificial testicle was removed without difficulty.

Lexer. Short note of a man who had undergone a radical operation for testicular tumor and a paraffin testicle implanted. The paraffin had become impregnated with the tumor substance. It was removed nine months after insertion.

Morestin (H.) refers to the many advantages possessed by vulcanite as a plastic material. It is well tolerated by the tissues. In his patient, castration was performed on the right side for tuberculosis. A piece of vulcanite of the size and shape of a testicle was placed in the scrotum and the wound sutured. After fifteen days the patient got up and resumed his occupation. There is no tumefaction and no pain or pressure. The foreign body appears to be perfectly tolerated. He has every reason to believe that the good results will persist.

I wish to add to this list of cases one which is not devoid of interest.

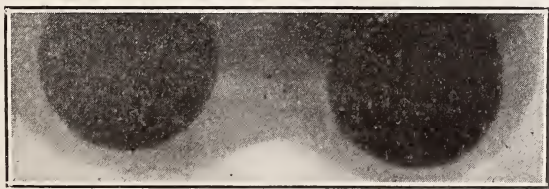
About two months ago M. K., a man of 28 and a native of England, consulted me in my office. He explained that his testicles had never descended and that up to two years ago the sexual function was normal. Coitus could be performed naturally and without effort one to four times a week. Five years ago he had a fall and developed orchitis of the left testis. He consulted a surgeon in Glasgow, who advised its removal. Orchidectomy was immediately performed and the patient was advised to leave the other side alone.

A year ago his sexual power began to decline, until intercourse once a month was the limit of his capacity. This is what brought him to my office. Physical examination disclosed no evidence of a right testicle. His mental condition was deplorable; he declared that life was unbearable. He was told that an attempt could be

made to bring down the right testis, but nothing could be promised, in view of the fact that his symptoms pointed to atrophy of the remaining organ. He was sorely disappointed and informed the writer that he had expected to get married, but that he now realized the futility of doing so. In a moment of despondency he said he would return to England, go to the trenches and take his chances. Furthermore, he felt much mortified at the thought that he was physically different from his companions, and begged that something be done to improve the appearance of his genitals before he enlisted. The possibility of implantation of foreign bodies in the scrotum was suggested and gratefully received. On March 14 an operation was performed. The right inguinal canal was opened and search was made for the testicle, which was eventually located in the right iliac fossa. It was small and flattened, about the size of a small lima bean. We decided to leave it undisturbed, and the inguinal canal and external ring were closed. We then proceeded to the implantation of the artificial testicles. A vertical incision was made on each side of the scrotum, the tunica vaginalis was opened and a solid rubber ball was inserted in each cavity. The tunica and skin were then sutured with catgut.

I was able to find no other reported cases where rubber balls were employed for testicular prosthesis.

Shortly after operation, libido was increased and erections occurred nightly; in fact, they were so persistent and annoying as to necessitate the use of bromides. We believe this to be merely psychic and temporary, and that he will soon return to his condition before operation. On the other hand, the change in his mental condition is striking. He has changed from a state of despondency to one of buoyancy of spirit and cheerfulness, and appears to take a real interest in life. The esthetic appearance is good and the parts look fairly natural.



We present a radiogram of the rubber bodies in the scrotal cavities. These were radiographed with difficulty, owing to the small size and retraction of the scrotum, which brought them close

to the pubes. We are indebted to Dr. Amédée Granger for his pains and trouble in taking the pictures.

At the time of preparation of this paper both small wounds were doing well, but subsequently stitch abscesses developed on each side, leaving a small fistula. These were treated at first with iodine and later with castor oil and balsam of Peru, one part to six. The fistula on the right side had closed once, but opened again; the left side is much smaller and shows evidence of early closure. As the secretion has become progressively scantier and thinner, there is no pain and tenderness, and no evidence of inflammation around the two spheres, we hope for early success. I propose to make a supplemental report later.

DISCUSSION ON THE PAPER OF DR. GELPI.

Dr. H. W. E. Walther, New Orleans: The essayist is to be congratulated in this case on the success he has had so far, and there is no doubt the psychic effect produced by such bodies is going to do a lot of good in such cases. I think I have read some of the reports that Dr. Gelpi has reviewed in the literature, and, as he says, there may be some advantages in using a rubber ball if it is insoluble. If this rubber is insoluble by the body fluids I should judge rubber would be better than metal.

Dr. Charles L. Chassaignac, New Orleans: I can add an unreported case of this character occurring quite a number of years ago. This was in a young man who had atrophy of one testicle as a result of mumps, and the object in that case was entirely cosmetic, or ornamental. He was mortified at times, because it was noticed at the gymnasium or some such place, that there was something wrong with the scrotum. At that time it was a comparatively new procedure. There were very few cases reported, and in this instance celluloid was the material I used, because that had been successfully employed. As you see by the paper, there is a variety of materials, and you pay your money and get your choice. Almost anything will do, because all cases reported have been fairly successful.

The only thing mentioned which might be objected to is the use of marble. It would bring too much weight to bear, and the only advantage would be that the man could say truthfully he had a "stone" there. As the only other comment I will make is that the doctor has treated the subject interestingly and adequately, he will not have his feelings hurt at one little criticism. I do not exactly approve of his use of the word testicle. A testicle made of silver, rubber or what not, is not exactly a testicle, and I think it is more prudent and less liable to cause criticism if we resort to the use of the word "ball," which is legitimate and at the same time popular.

Dr. G. Farrar Patton, New Orleans: There is one question I would like to ask about these rubber balls—namely, do you have them made specially and are they externally smooth?

Dr. Gelpi (closing): I thank the gentlemen for criticizing my paper.

In reference to the remarks of Dr. Chassaignac, who is always precise, I think, after all, he is probably right; still, we very often, especially in medical nomenclature, give names to things that are not exactly applicable. I think the suggestion as to the location makes the term fairly satisfactory, anyhow.

In regard to Dr. Patton's question, I will say that I wanted to get celluloid and was unable to find it. I did not find a ball of celluloid which would have been in one piece that was not glued together. This man was in a hurry to have things done. He was delayed on account of a mishap, and he was in a hurry to get back to Mexico. I looked around and searched for ivory. Some one told me that ivory had been used in these cases, but I could not get suitable pieces of ivory, so I discarded ivory. I finally made up my mind to use rubber. When we were boys we used to lose our rubber balls in the gutters and would not recover them for a year or two years afterwards, and, notwithstanding the exposure to weather, they were returned to us in a fairly good condition, so I thought, with nature's protective coat, it would remain almost indefinitely.

WHY GASTRO-ENTEROSTOMY FAILS TO RELIEVE.*

By W. R. JACKSON, M. D., F. A. C. S., Mobile, Ala.

The operation of gastro-enterostomy, or gastro-jejunostomy, is performed for the relief and cure of duodenal ulcer, gastric ulcer and cancer and gastric stenosis.

The symptoms that demand surgical intervention are those usually present in chronic gastric ulcer, duodenal ulcer and gastric carcinoma. The most conspicuous of these are pain, nausea, vomiting, indigestion, hyperacidity, hematemesis, melena, constipation and emaciation.

When posterior gastro-enterostomy for gastric ulcer is done the patient usually manifests marked, rapid improvement very soon thereafter, gaining from thirty to forty pounds in two or three months.

After a period of time, varying from six months to two years, most of the old symptoms recur—pain, distress after meals, nausea, vomiting and loss of weight. All of these symptoms indicate that the patient is not cured.

If we seek the cause by a second operation we find that the ulcer has not healed or has recurred, that new ulcers have formed or the old ulcer has assumed a malignant aspect.

In many cases of gastric and duodenal ulcers, where operation

* Read before the Alabama State Medical Association, at Montgomery, Ala., April 18, 1917.

has failed to give any relief whatsoever, we must seek the conditions that will give us the explanation of our failure.

What are the reasons or causes of failure in these cases? When it is recalled that gastric and duodenal ulcers are very often produced by a metastatic infection from a preëxistent local focus of pus it is no wonder that the ulcers are not cured by gastro-enterostomy, especially when the primary or essential etiologic factor is allowed to remain undisturbed.

Recently it has been shown that these pyogenic foci exist in various parts of the body, such as the teeth-alveoli, tonsils, prostate and the sinuses of the superior maxilla, frontal and ethmoid, also in the appendix and gall-bladder, as well as the crypts of the urethra and oviducts.

Any pus focus in any part of the body not necessarily chronic will cause distant metastatic infection. It appears that the mucosa of the stomach and duodenum is specially prone to infectious infarcts, explained by the frequent irritation of these membranes, thus favoring the localization of embolic bacteria. The size of the ulcer will depend, of course, upon the area of tissue infarcted.

There are other causes of failure of gastro-enterostomy than the failure to remove the preëxisting pus focus. The following conditions have been found to explain some of the failures: 1, imperfect anastomosis; as too small a stoma and angulation of jejunum; 2, presence of ulcers in the cardiac end of the stomach; 3, jejunal ulcers from sutures; 4, cicatricial contraction of the stoma; 5, too long a loop, giving rise to a vicious circle; 6, presence of other pathologic conditions, such as gall-bladder disease, appendicitis, intestinal stasis, ptosis of intestines and bands; 7, herniation of the jejunum through the meso-colon; 8, a neurotic patient.

It is conceded that gastro-enterostomy does the greatest good when the pylorus is obstructed by cicatricial *contraction* from the ulcers; thus it would appear that the operation is one of drainage. If ulcers are located elsewhere than at the pylorus, the operation does very little good, and, if any, it results from the bile and pancreatic juice entering the stomach and neutralizing the hydrochloric acid. The consensus of opinion of the best operators to-day is that all chronic ulcers of the stomach and duodenum should be *excised*, and then gastro-enterostomy done.

The most common site of ulcer of the stomach is at the pylorus, and the most common form is the chronic indurated.

Chronic indurated ulcer of the stomach near the pylorus always demands excision, or pylorotomy, and, if the ulcer involves the lesser curvature also, sub-total gastrectomy is in order.

It would appear that the frequent practice of gastro-enterostomy *without resection or excision of the ulcers* benefits the patient but very little, and, when improvement does result, it is of short duration.

The same rule of excision and resection applies to duodenal ulcer also. Gastro-enterostomy for duodenal ulcer, *without excision of the ulcer or resection of the pylorus, usually results in failure to cure the patient.*

Operation for gastric ulcer is frequently done when no ulcer is demonstrable. In such cases, the patient frequently shows marked improvement; therefore, it is taken for granted that ulcer did exist and its location problematical. Is gastro-enterostomy indicated when the ulcer is not seen or felt? Is gastrotomy and search for the ulcer ever justifiable when its presence cannot be shown otherwise?

What are the indications to be met to make our operations for gastric and duodenal ulcers more satisfactory?

I would place first and foremost the *removal of all preëxistent local infection*; and, second, the *excision and resection of all ulcers.*

Make a large stoma in your anastomosis, "suture the meso-colon opening an inch upon the stomach wall, so that this part of the stomach goes down through the mesocolon like a hopper, and the freedom of the ends of the jejunum is unhampered." Tack with suture the jejunum on each side of the anastomosis to prevent angulation of the same.

Perform the "no-loop" operation—that is, the loop of the jejunum is so short that there is no angulation to cause the "vicious circle."

Use catgut, and not linen or silk, for the "mucosa suture," thus avoiding the formation of jejunal ulcers, which give rise to symptoms like that of gastric ulcer. Be sure that the appendix is not affected, or, if it is, remove it at the same time of the main operation.

Likewise examine the gall-bladder for infections and stones, and

if either is present correct same; intestinal stasis, ptosis and bands should be looked for and corrected if possible.

It should be remembered that unless the many foci of infection which may produce the various metastatic lesions, such as gastric ulcer, are thoroughly and permanently removed, gastric and duodenal ulcers will recur, even if they have been *resected and excised*.

PROCEEDINGS OF THE AMERICAN SOCIETY OF TROPICAL MEDICINE

THE DIAGNOSIS OF LEPROSY FROM A PUBLIC HEALTH STANDPOINT.*

By G. W. McCOY, M. D.,
Surgeon, U. S. Public Health Service.

The problem of the diagnosis of leprosy confronts the health officer and the practitioner sufficiently often to justify its discussion. With practically all of the other infectious diseases, where public interest demands that the sick shall be isolated, the period of separation from the usual environment is so short that no great injustice is done if a person be detained on what later appears to be doubtful or insufficient grounds.

In leprosy, however, if an error be made, the most serious consequences may result to the individual who is deprived of his liberty, and to the community which is obliged to support him.

The problem, it appears, differs materially from that of other contagious diseases in another and important respect. So far as concerns most other diseases requiring isolation, the question is settled as soon as what we may call the medical diagnosis is made. There is some difference of opinion among students of leprosy as to whether any such uniform procedure is applicable to this disease. Perhaps a comparison might be made with tuberculosis, a disease which ordinarily we do not isolate, but which presents certain points of analogy pertinent to the present subject. Cases of pulmonary tuberculosis with "open" lesions are generally regarded as a menace to persons with whom the consumptive associates, un-

* Read by title at the Fifteenth Annual Meeting of the American Society of Tropical Medicine, New York, June 5, 1917.

less appropriate measures be taken. On the other hand, lymphatic or articular disease due to the tubercle bacillus is not regarded as a condition which calls for special precautions. The status of the two types of infection with the plague bacillus is also analogous. In one, the pneumonic type of the disease, we have a highly contagious virulent disease, while in the other, the bubonic type, the danger of infection spreading directly from the patient is practically *nil*. In both of these examples, cited by way of analogy, the difference, of course, is simply that in the one type of the disease the causative microorganisms leave the patient, while in the other they remain in his body. Many cases of leprosy may be compared to the types of the diseases mentioned, which are, generally speaking, of no sanitary importance.

While we are ignorant of the mode of conveyance of leprosy, we assume that in some manner the bacillus passes from the leper to a well person. Whether the transfer be direct or indirect, we do not know. It is well established that there are certain cases of leprosy in which the bacilli are found only in such locations in the body as preclude their escape; such, for instance, as the pure nerve cases. Many, perhaps the majority, of leprologists consider these cases as of little or no danger. The following opinions are of interest:

J. Ashburton Thompson (*Lepra*, 1905-1906, Vol. VI, p. 247), according to the report of the Board of Health on leprosy in New South Wales for the year 1905, apparently thinks that nerve leprosy is not a menace.

Dehio (*Lepra*, 1903-1904, Vol. IV, p. 8) quotes with approval the opinion of Lonk, that "maculo-anesthetic leprosy" is not itself, or only in a slight degree, contagious."

A. Blaschko (Abstract, *Lepra*, 1900, Vol. I, p. 149) says "it can be concluded that the non-tuberculous, the so-called anesthetic leprosy, can hardly ever be considered a source of infection; * * * the matter of their phlegmons and ulcers is free from bacilli and the patients are, therefore, comparatively harmless to their surroundings."

F. M. Sandwith (Abstract, *Lepra*, 1907, Vol. VII, p. 263) considers as especially dangerous only those in which the bacilli can gain access to the outer world with discharges from the nose, the pharynx or from ulcers.

We must, of course, always bear in mind the fact that, for

reasons which are by no means clear, there are localities in which leprosy shows no tendency to establish itself as an endemic disease. For example, the numerous Scandinavian lepers who have lived in our Northwestern States have failed to establish a focus of the disease; other examples are afforded by certain large cities in temperate climates, such as London, Paris, Berlin and New York; each of these has at all times a considerable number of lepers, yet the disease has not been established in any of them.

We find that, for sanitary administrative purposes, the term "leper" has been defined in India as follows: "Any person suffering from any variety of leprosy in whom the process of ulceration has commenced." This would include trophic ulcerations in nerve leprosy, in which bacilli would probably not be found, as well as ulceration of nodules, which might be expected to show bacilli. Parenthetically, it may be remarked that often the bacilli are hard to find in ulcerations of nodular cases.

Scandinavian writers insist upon the special danger of nodular cases; for example, Saem Bjarnhjedinsson (*Lepra*, 1909, Vol. VIII, Suppl., p. 397) states that since 1909 all tuberculous cases are required to go to the asylum "as long as there is any available room."

The New York City Department of Health expresses the opinion (Weekly Bulletin, 1915, U. S., Vol. 4, p. 352) that "when the leper has no open lesions and no discharge from the nose it is safe for him to be at large." This refers to New York City.

The laws of the various States which have statutes covering leprosy fail to discriminate between cases that are dangerous and those that are not. In Hawaii the Board of Health passes on each case, basing its action upon recommendations of a board of medical examiners.

The clinical diagnosis of leprosy is often difficult. Even in communities in which the disease is prevalent, and where, presumably, physicians have ample opportunity to become acquainted with it, disagreements frequently occur. It is universally admitted that a positive microscopical finding warrants the diagnosis of leprosy. It seems to me that we should be careful even about this. When one secures from a lesion, or from nasal mucus, a smear which shows an abundance of typically stained and typically grouped bacilli, there is practically no ground for difference of opinion, though there is on record a case of infection with the avian tubercle bacillus in which the microscopical appearance of the organism was

indistinguishable from that of leprosy, and indeed the clinical picture was suggestive of that disease. But it is in cases in which the bacilli are very scanty that difficulty occurs; a single acid-fast object, even if it looks precisely like a leprosy bacillus, should not be deemed sufficient to settle the diagnosis. Even if several are found, especially if they are not entirely typical, we should be cautious. But it is particularly in relation to smears from the nose that we need to be careful. It has long been known that acid-fasts may be found in the nose of healthy persons. These are usually much more plump than the leprosy bacillus, and ordinarily they should cause no confusion, but occasionally they are indistinguishable from Hansen's bacillus.

A case is recalled in which a physician of large experience in the diagnosis of leprosy allowed himself to be led into error by the finding of large numbers of acid-fasts in the nasal discharge of a case in which the clinical findings were equivocal. A further study of the case led to the correction of an error which would not have occurred had due caution been exercised in the interpretation of the examination of smears from nasal secretion.

In early cases it may be necessary to defer a positive diagnosis for several months, until the acid-fasts can be demonstrated. It is not uncommon for leprologists of large experience to decline to commit themselves to a diagnosis pending the evolution of doubtful skin lesions, such as leucodermic areas and erythematous or pigmented spots. On the other hand, nodules, no matter how early, and the circumscribed, slightly elevated fawn-colored patches, almost invariably yield abundant proof upon microscopic examination.

The technic of microscopical examination which the writer has found of most use is as follows: After cleansing the nodule or other area from which it is desired to make a smear, the area is seized between the thumb and forefinger and squeezed until it is bloodless; maintaining the pressure, with a safety razor blade held in the other hand, the operator makes a small incision in the bloodless area.

The razor blade is then inserted into the small wound, held at an angle to the incision, and the sides of the latter scraped, the material transferred to the slides, stained, and examined in the usual manner.

As has been said, for all practical purposes, characteristic microscopical findings clinch the diagnosis, and there are many cases in

which the clinical diagnosis is so plain that a microscopical examination seems superfluous; even in these, however, it should not be omitted.

Serological tests have been proposed by numerous writers. Antigens made from acid-fast bacilli and from leprous nodules show positive. Complement fixation results with a high percentage of leprous serum and appears to be given but rarely in other conditions. They, however, can be regarded as corroborative only. It is well known that a positive Wassermann is given by a large proportion of lepers, and it is a fact, though less well known, that many give positive complement fixation with old tuberculin used as antigen. If the patient gives both the Wassermann and the reaction with tuberculin (complement deflection), the evidence that the disease present is leprosy is strong. It has been applied especially in differentiating syphilis from leprosy. As is true with most diseases, the difficulties in diagnosis are encountered chiefly in the early mild or atypical cases, and in these the laboratory aids to diagnosis are less likely to be of use.

We sometimes hear of histological evidence of the presence of leprosy. Unless sections contain acid-proof bacilli it appears unlikely that they would be of much value. The matter of diagnosis resolves itself apparently into the finding of acid-fast bacilli. If these are absent, while the case may be leprosy, it is probably not in a stage or of a type dangerous to the community, and from a public health point of view it is, therefore, of little consequence. Sometimes we must be guided by other than purely public health considerations. Thus, with nerve leprosy, in which we are unable to detect bacilli and which we regard as not a menace, the patient may also suffer from tuberculosis, or have extreme ulcerations, or may be indigent. Such a case may, as a matter of public charity, be isolated. If conditions change so that, at a later date, it seems desirable to release such a case, there is no objection to so doing.

Thus far I have had in mind more particularly the circumstances surrounding a case when the question is one of commitment to a leper asylum. Sometimes we must consider the subject from the point of view of discharging a patient from an asylum. Here we approach the question with the knowledge that the patient has at some time in the past been clinically, and probably microscopically, positive, but I see no ground for modifying the requirement that such cases shall be released if they prove to be negative micro-

scopically. It is likely that such cases will be scrutinized even more carefully than those that are to be passed upon for commitment. Microscopical preparations will be made and, if records are available, the site from which they are to be made may be chosen with reference to previous findings. It is sometimes difficult to convince ourselves that a case clinically practically negative should remain in isolation by reason of the presence of a few acid-fast: in a single one of many smears, but we must have some standard, and the presence of even a few characteristic bacilli is not to be ignored.

There are a few cases in which, in spite of the most complete examination, clinical and microscopical, it is impossible to say that a given case is leprosy. Under such circumstances, the only safe rule to follow is to give the patient the benefit of whatever doubt exists. This is one phase of public health within which the rule to "give the public the benefit of the doubt" should not apply. In non-endemic foci the missed case does no harm, and in endemic foci there will always be a good many undoubted lepers at large, and an additional doubtful one will be of no material consequence.

In conclusion, I may say that the criticism may be made that I have emphasized the laboratory aspect of the subject and minimized the clinical. This is true, but it is believed that there are many cases in which laboratory methods must be resorted to in order to differentiate cases of public health importance from those which are of no moment.

NOTES ON GRANULOMA VENEREUM.*

By HENRIQUE DE BEAUREPAIRE ARAGAO, M. D.
Institute Oswaldo Cruz, Rio Janeiro.

The granuloma venereum, synonym with granuloma of the pudenda, groin ulceration, serpiginous ulceration of the genitals, granulome ulcéreux des organes génitaux, etc., was first noticed in India (1882) and afterwards in many other generally tropical or subtropical countries. Quite exceptionally some cases of people who never lived in warm countries were discovered in Europe.

In North America several cases have been found, while in South America granuloma exists undoubtedly on the east coast from the Guayanas to the Argentine Republic. In Brazil the cases were not

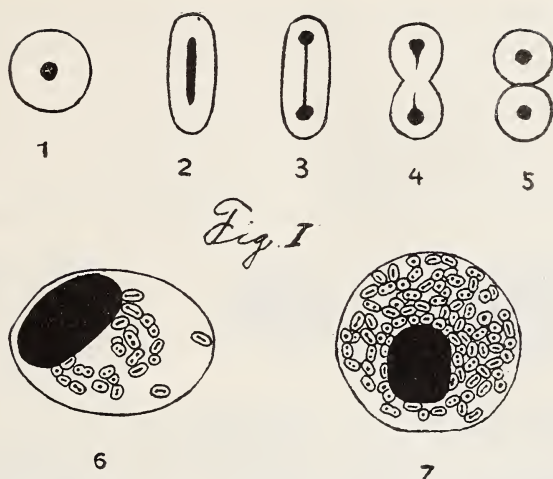
* Read by title at the Fifteenth Annual Meeting of the American Society of Tropical Medicine, New York, June 5, 1917.

recognized, and generally confounded with venereal or other diseases until, in 1909, F. Terra, professor of dermatology in Rio, published the first case, with the diagnosis of granuloma. Prof. Eduardo Rabello found, in 1912, Donovan bodies in smears of the same case. In the same year, together with the late Gaspar Vianna, I found occasion to study several cases of granuloma, verifying always the microbe first seen by Donovan, and studying its nature. We also discovered a new and very effective treatment by intravenous injection of tartar emetic.

The clinical forms of granuloma observed in Brazil are similar to those described from other countries: Torpid serpiginous ulcers, situated on and around the genital parts and lasting many years without tendency to spontaneous healing. A localization in the mouth is rare, but has been seen in Brazil also.

ETIOLOGY.—Views on the etiology of granuloma have varied a good deal. While on one side it has been considered as a manifestation of tuberculosis, syphilis, frambœsia or leishmaniasis, on the other hand it was attributed to a specific agent, a bacterium, a treponema, a fungus, etc. Of all these microbes, only one is constantly present, and by its general qualities may justly be considered as the cause of the disease. It was first found in 1905 by Donovan, and became known under the name of Donovan's bodies; later on it was well described by Siebert and Flu, who considered it belonging to the bacteria with capsules. In Brazil this microbe was found in all cases of granuloma. Together with G. Vianna I studied its morphology, and we collected it in a separate group under the name *Kalymmato bacterium granulomatis*. It does not take the Gram stain and is only weakly stained by the common anilin dyes. Its characteristics only appear well with Geimsa's stain, which shows the surrounding capsule very distinctly. This capsule contains small, round or ovoid bodies in the shape of small cocci of about three-tenths of a micron, which afterwards stretch and appear as small rods of one-half to one micron. On dividing, they show a dumbbell form, and the constriction increases till a complete separation occurs. The germ then appears under the form of a diplococcus; the elongated capsule soon gets strangulated in the middle and finally the products of the complete division separate. (Fig 1-5.)

A special characteristic of the germ of granuloma is its localization in the tissues, where it appears principally in the protoplasm



of certain cells, and, by its multiplication, assumes a very characteristic aspect (Figs. 1, n° 6 and 7). In sections, free germs are generally in smaller number than those in the interior of leucocytes and cells of the connective tissue (Pl. 1, fig. 7). The plasma cells, though very abundant in granuloma tissues, never show germs in their plasma, as Flu asserted.

Inside of the cells the germs sometimes appear without their capsule. They form at first a zoöglea of varying size near to the nucleus, similar to chlamidozoa, in their appearance, as Flu pointed out (Pl. 1, fig. 1-4). Afterwards the elements of this zoöglea separate, showing now the characteristic capsules (Pl. 1, fig. 1-6). The infected cells first become hypertrophical, the nucleus being dislocated by the germs; afterwards they are destroyed. Often also the microbe degenerates in the cells and is reduced to fragments, leaving only the rest often impossible to recognize.

The germs of the granuloma are found over the whole extension of the ulcers, but mostly in the zones where progression takes place.

In culture experiments we first obtained in three granuloma cases, by the use of Sabouraud's medium, a capsule bearing bacterium, very much alike to the bacterium of Friedlander in morphological, cultural and pathogenical qualities. For this reason we first had some doubts about its identity with the tissue germ. It grows well on all the laboratory media, and when injected in guineapigs, rabbits or marmosets, kills them in twenty-four hours under profuse septicemia. Dr. H. Araujo obtained the same microbe five times more, even from not exposed tissues, which increases the value of these results.

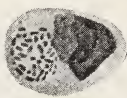
These, however, require still further confirmations, and the importance of the cultivated bacterium can only be established by more careful studies.

Inoculations of laboratory animals with the tissues of granuloma failed to produce the disease.

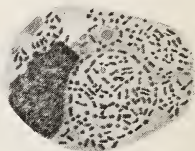
TREATMENT.—The difficulty of curing granuloma is generally admitted. Many treatments have been tried, as cauterization, mer-



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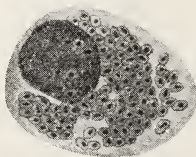
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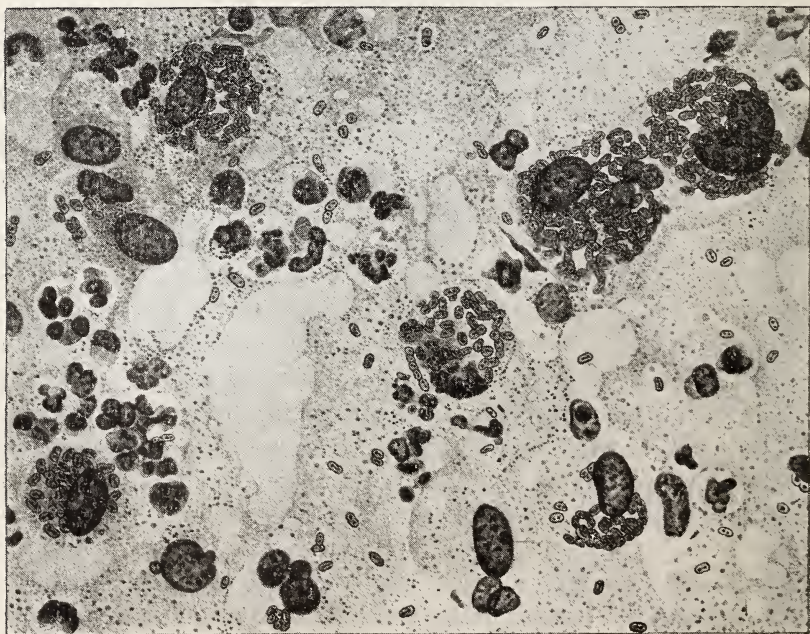
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cury and all the various arsenical preparations, including salvarsan and neosalvarsan. A surgical treatment by extirpation can only apply to cases without extensive localization. Up to a certain time the only treatment giving favorable results was the use of X-rays, which depends on complicated and not always available installations. For this, G. Vianna and I experimented with all kinds of treatments, including vaccinothérapie, but without result, until we resolved to try the injections with tartar emetic, which had proved so efficacious in leishmaniasis. With this treatment we obtained very good results by rapid cicatrization of the lesions of granuloma.

We use the emetic in the same form as in leishmaniasis, in

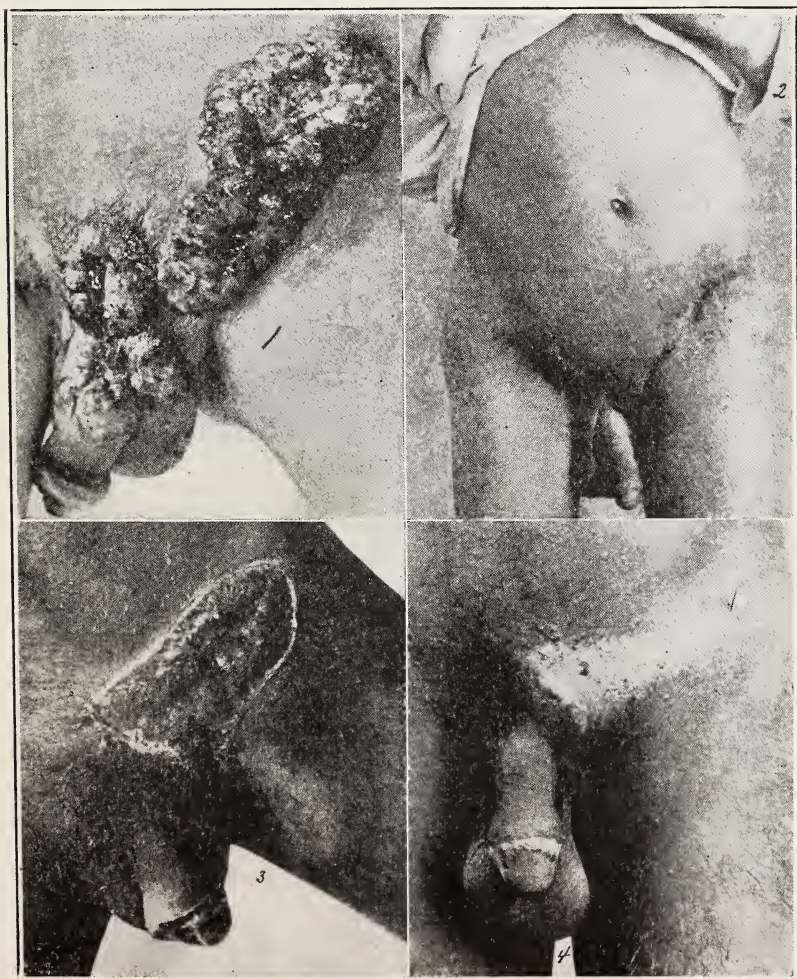


PLATE 2.

intravenous injections of ten to twelve c. c. of a one per cent solution in sterilized physiological salt solution by infiltration. They are generally well tolerated; only occasionally the patients complain of cough and passing rheumatoid pains, which do not interfere with the treatment. The number of the injections varies according to extension of lesions and rapidity of cicatrization. When the lesions are healed the treatment must not be interrupted, but continued for another ten or twelve injections, in order to warrant the cure. It is very advisable to give another series of twelve injections two months after the first treatment, to prevent returns of the disease, which are pretty common when such precautions are not taken.

In Brazil the cases treated in this way already pass the number of fifty, and this method is already used in other countries where the disease exists, like Argentine, in Uruguay, Australia and England, the results being very good. In cases with superficial lesions the combination of emetic with X-rays is very advisable; unfortunately its general use is prevented by the rarity and expensiveness of the installations.

The accompanying photographs illustrate the brilliant results obtained in two of our granuloma cases by injections of emetic in one per cent solution (Pl. 2, figs. 1, 2, 3 and 4).

SOME OBSERVATIONS ON THE DYSENTERIC ENDAMŒBÆ.*

By HENRIQUE DE BEAUREPAIRE ARAGAO, M. D.
Institute Oswaldo Cruz, Rio Janeiro.

I.

NUCLEAR AND PROTOPLASMATIC ALTERATIONS OF THE ENDAMŒBÆ.

The typical nucleus of a dysenteric endamœba is vesicular, wholly spherical and limited by a slender membrane with double outline. In the inner part of this nucleus, near the membrane, there is a lining of fine granules or very delicate chromatic masses, and, at the centre, a small karyosome varying a little in size, sometimes showing a centriole, separated from the rest of the nucleus by a small, clear halo. A delicate net of lamine, the meshes of which contain normally less chromatic granulations than the zone

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near the membrane, extends from this halo to the periphery of the nucleus.

In this normal structure various modifications may appear, due to various causes, the most important being those which diminish the vitality of the protozoon, as, for instance, the age of the parasite or an insuitable medium due to inherent conditions or the influence of the therapeutic agents. Such changes are rather characteristic, and appear separately or together, in the nucleus and in the protoplasm, allowing, on first sight of a preparation, to affirm that the parasites are not in the best condition of life.

The nuclear alterations of the endamæba regard the form, the chromatic elements, or both, at the same time. In the first case the nucleus presents itself more or less deformed, semi-lunar, sub-triangular, etc., with loose membrane and less distinct—in short, with the aspect considered by Schaudinn—as typical for the *Endamæba histolytica*, and so frequently met with in old cases of dysentery. There is not yet any alteration in the quantity of nuclear chromatin, the nuclear modifications being limited to deformation due to diminished inner tension.

There are still other modifications, accompanied by a notably altered relation of nucleus and plasma. The chromatic part of the nucleus increases, while the amœba shows different aspects. One of the more common types of this nuclear modification is characterized by an abnormal increase of the peripheric chromatin in the nucleus, which, instead of the usual small space, occupies now the whole halo existing between the karyosome and the nuclear membrane, and covers the trabeculæ of the linin. Other times the nuclear chromatin, instead of spreading through the nucleus, forms more or less regular and thick masses, which, lining very regularly the inner side of the membrane, remind of the aspects described by Schaudinn as the first stages of multiple division of the nucleus in the *Endamæba coli*, and seen also by Hartmann in *Endamæba tetragens*. These chromatic masses often vary in size and occupy an irregular position in the nucleus of the endamæba.

The endamæbæ, with nuclear alterations, sometimes show also more or less distinct modifications of the protoplasm. The most common consist in having the protoplasm filled with vacuoles of various sizes and without or with very few red globules inclosed; bacteria increase in the same degree as the degeneration of the amœba. The movements of such parasites are less lively, the differ-

ences of the ectoplasma and the endoplasma being less visible, principally when the amœbæ are at rest.

The just exposed nuclear and protoplasmatic conditions differ so much from those normally seen in amœbæ that one might take them for different species, as Schaudinn and Koidzumi did, who distinguished the *Endamœba histolytica* and *nipponica* on such characters. One might also confound, easily, degenerated amœbæ with epithelial cells and very altered leucocytes found in dysenteric stools, because these elements, in fresh preparations, resemble immovable amœbæ, and, after staining, look very much like degenerated forms of the parasites. Owing to this likeness many authors mistook for degenerated amœbæ epithelial cells and dead leucocytes showing fragmented nucleus and general aspect of protoplasmatic masses with spherical granulations of various sizes, isolated or in groups.

II.

PSEUDO-CYSTS OF ENDAMŒBA HISTOLYTICA.

To-day most of the authors admit that the vegetative stages of the *Endamœba histolytica* represent only a degenerated form of the *Endamœba tetragena*, but there are still doubts as to the small cysts of that parasite, the existence of which may not be denied, in view of the minute description given by its discoverer, which, according to Hartmann, is still a strong proof for the existence of that endomœba as an autonomous species.

In our opinion, however, Schaudinn mistook for cysts of the *Endamœba histolytica* the small secondary cysts of *Blastocystis hominis*, the so frequent parasite of the intestine of man and of many other animals. This is not the only confusion caused by the cysts of *Blastocystis*, for many times and by many authors they were taken for cysts of trichomonas, trichomastix and other intestinal flagellates. Not long ago Alexieff asserted its vegetable nature, and this idea seems to become generally accepted.

We believe to have succeeded in seeing the initial forms of this fungus in stools, in which they are represented by cells constituted of rounded, oval or elliptical mass of protoplasm, with excentric nucleus. The nucleus is spherical, without distinct membrane, and often with the chromatin divided in two portions—one compact and very abundant in these initial forms, the other one less dense

and not so strongly colorable than the first portion. In the protoplasm of this initial form appears soon a mass of thick substance, little sensible to staining, which, increasing in size, forms afterwards the central body described by Alexieff in the primary cysts of the blastocystis. This central body is, in our opinion, formed by reserve substances.

By the increase of the central body, which becomes spherical, and with the growing thinner of the surrounding layer, is formed the so-called primary cyst, which is surrounded exteriorly, in the shape of membrane, by a gelatinous lining, sometimes little distinct. In the primary cyst the nuclei are multiplied by successive division and are scattered all over the surface of the cyst.

Finally, these nuclei are isolated, surrounded by a small portion of protoplasm, around which appears a thick membrane with double outline, at the expense of the reserve substances accumulated in the interior of the primary cyst, and which, little by little, are disappearing. On the surface of the primary cyst in such way appear minute, bud-like secondary cysts of a diameter of five microns, seven microns, with resisting walls and absolutely alike to the forms described by Schaudinn as cysts of *Endamæba histolytica*.

We had already noted such cysts in all the phases of its formation in stools of frog, and lately having found them also in human stools, we became convinced of their probable relation with the forms described by Schaudinn.

III.

CYSTS OF THE ENDAMÆBÆ TETRAGENÆ AND COLI.

For many times the distinction between the cysts of the two endamæbæ was held as very easy—the cysts of the *Endamæba dysentericæ* being very small (seven microns, fourteen microns), with never more than four nuclei and containing many chromidia, and the cyst of the *Endamæba coli* being larger (more than fourteen microns), containing few chromidia, and eventually eight nuclei. Hartmann and Whitmore noted lately the presence of cysts of *Endamæba coli* with twelve and sixteen nuclei, and, on the other side, Swellengrebel, Huenhr and Schiess refer the existence of *Endamæba tetragena* with eight nuclei in case of amoebic dysentery, where the presence of *Endamæba coli* never has been observed. We, too, observed lately cases of amoebic dysentery, verified by infection of the animal, which, during the acute stage of the disease,

never presented *Endamæba coli* or its cysts, and, on the entering of the parasites into the phase of encystment, showed cysts with eight nuclei. We do not see why the formation of octonucleated cysts in the *Endamæba tetragena* should not be admitted, in view of the certain, although exceptional, existence of forms with twelve and sixteen nuclei in the *Endamæba coli*. In both the parasites they are abnormal forms of the nuclear division in the cyst of the endamæba, as happens, analogically, in other unicellular beings. For instance, in the *Blastocystis*, for which the normal formula of division of primary cyst is eight, not rarely such cysts occur with up to sixteen secondary cysts. The matter, in our opinion, is worth a most careful study, as the regularity of the nuclear division in the cysts of the endamæbæ has been so firmly established as one of the most secure elements of distinction between the two parasites of man.

There is still another question we want to refer to—that is, the presence of chromidia or siderophilous bodies in the cysts.

Such formations have been considered by some authors as constituted of substance of nuclear origin, by others as reserve substances, and, finally, as substances of indeterminated nature. Schaudinn, for instance, attributed to these formations a very great influence upon the constitution of the cysts of the *Endamæba histolytica*, while in the *Endamæba coli* they were only considered as substance of vegetative nature, although of nuclear origin.

We believe that the chromidia or siderophilous bodies are reserve matter, accumulated in the interior of the endamæbæ on occasion of the encystment and destined to be consumed by the parasite during the phases of nuclear multiplication, and therefore disappearing completely or being mostly used up, when the cysts attain four or even eight nuclei.

That is our interpretation of the chromidia of the endamæbæ. They are simple reserves of nutritive material destined to the consumption of the parasite during the phases of encystment. The appearance of the so-called “chromidia” is a sure indication of the beginning encystment of the endamæbæ. They are characteristic of the phases of the encystment, as are also the reduction of size of the protoplasma and the expulsion of the erythrocytes, bacteria and other substances contained in the protoplasma of the parasitical endamæbæ.

IV.

NOMENCLATURE OF THE ENDAMÆBÆ OF MEN.

Previous to the discussion of this matter we want to declare that we adopt the generic denomination "*Endamæba*," preferring it to the denomination generally adopted of "*Entamæba*," owing to a matter of scientific priority.

Really, as early as 1879, Leidy created the expression "*Endamæba*" for the amœbic parasites, the type of which is the *Amæba blattæ* (Buetschli), while the second designation was only given in 1897 by Casagrandi for the same parasite. More recently, in 1911, Chatton and Lalung-Bonnaire proposed the division of the genus *Endamæba*, the *Endamæba blattæ* figuring as type of the genus, while the genus *Loschia* was established for the parasites of man, and even a sub-genus *Viereckia* (Chatton), for the *Endamæba tetragena*.

The division of the endamæbæ into these new genera does not seem acceptable. As Hartmann says very well (incontestable authority in this matter), the difference of the nuclear structure seems to be very great when we compare only the nucleus of an *Endamæba blattæ* with one of the *Endamæba tetragena*, but becomes wholly worthless if we examine the nuclei of the different known endamæbæ, and even when we establish a careful comparison between the different muscular forms of the two endamæbæ. Such a comparison shows to the observer at the first glance the existence of intermediate phases between the apparently so different forms. Therefore, until a more thorough observation of the cycle of the parasites of man and of cockroaches authorizes a definite separation, we believe that they are to be included in the same genus of *Endamæba*.

Not less complicated is the question of the specific denomination of the endamæbæ parasites of the human intestine.

The publication of the classic work of Schaudinn in 1903 seemed to give a complete and definite solution to the question. The well-known investigator distinguished at that time two species of endamæbæ in the human intestine, calling the parasite with pathogenic propriety *Endamæba histolytica*, n. sp., and identifying the species without this propriety as the *Endamæba coli* (Loesch). At the same time, Schaudinn published a study on the cycle of both the parasites. Some years later, in 1907, Viereck, having found an *Endamæba dysenterica* with cystic forms different from

the forms described by Schaudinn for the *Endamæba histolytica*, created a new species, classifying it as *Endamæba tetragena*, and Hartmann, a year later, having also observed vegetative forms of a parasite different from analogous forms of *Endamæba histolytica*, called it *Endamæba africana*. It did not take much time to recognize the identity of the *Endamæba tetragena* Viereck with the *Endamæba africana* Hartmann, the first name, therefore, prevailing. For the same reason, the *Endamæba schaudini* Lesage is to be considered as synonym of the *Endamæba tetragena*.

Once the corrections made, two known species of pathogenic endamæbæ remained: The *histolytica* and the *tetragena*, and a saprophytic species called *Endamæba coli*. In the course of time it was verified that the cases of dysentery produced by the *Endamæba tetragena* exceeded greatly the cases caused by the *Endamæba histolytica*, the geographic distribution of which shortened always more, contrary to what was expected. For instance, in the Asiatic amœbic dysentery, which was thought to be caused by the *Endamæba histolytica*, the *Endamæba tetragena* was little by little recognized as nearly the exclusive causal agent. Owing to these facts, Hartmann resolved to revise the matter carefully and to study the material of the deceased Schaudinn, which had passed into his possession.

Hartmann recognized that most, if not all, of the preparations of Schaudinn mentioned as being *Endamæba histolytica* contained *Endamæba tetragena*, and that the normal forms of this parasite had been identified by Schaudinn as being *Endamæba coli*. It did not take long before there appeared several confirmations of this opinion, and the authors indicated the frequent presence in the stools of dysenteric people of these federated forms of *Endamæba tetragena*, by which Schaudinn had described the *Endamæba histolytica*.

From the exposition of the two first parts of this paper on the nuclear aspects and on the process of encystment seems the result that there does not rest any doubt as to the absolute identity of *Endamæba histolytica* and *tetragena*, which are to be considered definitely, one as the normal form, the other as the degenerative form, of one and the same parasite prevailing, as older the denomination of *Endamæba histolytica*, and the denomination of *Endamæba tetragena* becoming its synonym.

There remains still to discuss whether the denomination *Endamæba histolytica* prevails on all the other denominations. The

result of clinical and microscopical observations and the experiences on animals show a complete unicism concerning the syndrome of endamæbic dysentery, which is caused all over the world by the only species of endamæba. Therefore, still, according to the rules of scientific priority, is to prevail on the predomination of *Endamæba histolytica*, the name of *Endamæba dysentericæ*, given in 1891 by Councilmann and Lafleur to the parasite cause of the dysentery. But, as concerning the question of priority, we cannot but take to the older designation, it is only fair to give to *Endamæba dysentericæ* or *Endamæba histolytica* the denomination of *Endamæba coli*, created primitively by Loesch.

Really Loesch described in 1875 his first *Amæba coli* of an absolutely typical case of dysentery, with many characteristic endamæbæ in the stools, which possessed the absolutely decisive character of their specificity, for they showed themselves pathogenic for the dog. Nor does the fact matter that Loesch observed his case of dysentery in Russia, for we know that not only there, but also in nearly all the countries of Europe, there have been cases of amœbic dysentery, and that sometimes, in no small number, as indicates the voluminous literature on this matter.

It is a great pity that the authors who, after Loesch, occupied themselves with the matter, did not take into consideration the so precious characters of the amœba described by him and gave new denominations to it, or did take it for the inoffensive endamæba of the human intestine, as Schaudinn still did in 1903. Brumpt criticizes rightly the Orientation of the German scientist, although he does not advise to modify the aspect of the question on account of the profound alterations the denomination would cause.

It is the more unjustified to stick to this error, as the work of Loesch deserves much praise for having been made at a time when investigations of that kind, owing to the existing difficulties, represented an extraordinary and very meritorious effort. We are very well aware that the commutation of name of the *Endamæba dysentericæ* into *Endamæba coli* will alter the nomenclature, but there should preponderate that many other modifications of this kind have been made in classic designations (ankylostomum instead of uncinaria; plasmodium instead of hemamæba, etc.), in obedience to the well-justified rules of priority, without taking into consideration inconveniences of the moment.

It still remains to know how to denominate the common endamæba of the human intestine, known as yet by the name of *Enda-*

mæba coli. To this parasite, in our opinion, should be applied, as being older, the denomination of *Endamæba intestino-vulgaris* (Quincke and Roose, 1893).

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COMMUNICATIONS

OUR STATE BOARD OF MEDICAL EXAMINERS.

By E. M. DUPAQUIER, M. D., New Orlean.

Just a word from a friend, one of the Old Guard, before he retires from the firing line.

Very few people realize the importance of our State Board of Medical Examiners. Of course, only those who operate the Board's machine know the intricacies of its mechanism. As the interpreter for the Board, of examination papers in French, Italian and Spanish, I know a few things that ought to be told again and again, *pro bono publico*.

The object of the Board—namely, to protect the public and the profession against the “unfit”—must be borne in mind constantly by everybody; and, to carry out the Board's purpose thoroughly, everybody must know it, is a difficult task. But the Board's function can be facilitated.

Because, by instinct and by training, I rely on my personal efforts to think, speak and act in my own independent way, like the Old Covenantor, satisfying my conscience first and going forward, I sincerely believe in the genuine American spirit of individual effort and resourcefulness, but I yield to reason and believe, too, in concerted action. So, after all, I regret to see our boards in general—individually able—lack system, organization to harmonize individual efforts and produce effective team-work.

Most of our boards, like our committees in all lines of activities, are too "fussy" or too "slow." They limp like cripples, wasting time and money, two great values wrongly appropriated. A close friend of mine, who knows more than I do, told me that all this was due to the pin-heads, the swell-heads, the bone-heads, and dead-heads, that play the grand game of politics, and they obstruct it and they spoil it, and they lower it to a peanut-tossing.

It is a fact that some members of our Legislature will meddle in problems out of their line, such as those of education, and Boards of Medical Examiners are essential factors in the betterment of medical education. The men appointed on the Boards are most willing and able to do their work thoroughly, because, nowadays, politicians have better material to select from; but the Legislature, as blind as a six-months' fetus, will not appropriate the money needed to maintain the Board in a healthy and vigorous condition; money is good nourishment.

I hope our wise young heads will do something to get the necessary money for our State Board of Medical Examiners to work efficiently. Too much is left to the individual effort and sacrifice to do the right thing; that is wrong. Our Boards must be organized firmly. No *pro tem.* executive officer, no absentee member, no vavancy must be tolerated any longer.

The result of this lack of a solid organization is hesitation in action, and lack of confidence in aggressiveness, of course, cripples the work of the Board. Some of our wise young heads will say: "Old man, you are singing an old tune." Sure; but some of these old tunes are good to sing again and again. Right now, much to your moral well-being, don't you sing or whistle, every day, these old tunes, the "Star-Spangled Banner" and "La Marseillaise"? Keep them up, youngsters!

A CORRECTION.

Editors NEW ORLEANS MEDICAL AND SURGICAL JOURNAL:

On page 252 of the September issue of the JOURNAL I notice that Dr. Nelson, in discussing Dr. W. M. Perkins' paper, made the following comment: "I have heard Dr. Cohn, of New Orleans, in 1913, say he had put on Lane plates in compound fractures, and they got well."

Some one else might have made the statement; I certainly did not.

Will you kindly correct the error in a subsequent issue of the JOURNAL, and oblige, sincerely yours,

ISIDORE COHN.

MEDICAL SECTION, LOUISIANA STATE COMMITTEE OF NATIONAL DEFENSE.

(P. O. Box 778, New Orleans, La.)

BULLETIN II.

The Medical Section of the State Committee of National Defense would call attention to the members of the medical profession who have joined the Medical Reserve Corps as shown in the list below. These names are of those who have been recommended for commissions with the ranks as indicated. Those who have not accepted, and who may have declined the commissions, or those who have been returned or honorably discharged, should not appear on the active list, and these should notify the Chairman at once, giving the status of their commissions. *If they are still holding the commissions without any action they are doing an injustice to themselves* and are retarding the work of the Surgeon General's office. If hesitating for want of advice, this may be promptly received from or thru the Chairman of the Medical Section.

LOUISIANA MEDICAL RESERVE CORPS.

(The asterisk (*) indicates active duty so far as known. Others may be on active duty, but the Committee has not been informed.)

	Rank.		Rank.
Alexandria.		Belcher.	
*Cappel, Jack T.	1st Lieut.	Henderson, Walter F.	1st Lieut.
*Cappel, Marvin	1st Lieut.	Blanchard.	
*Gremillion, C. J.	Captain	Doles, Howard P.	1st Lieut.
*Rand, Paul King.	1st Lieut.	Bogalusa.	
Randolph, Robert L.	1st Lieut.	Alford, Oliver W.	1st Lieut.
*Schultz, Edwin W.	1st Lieut.	Bossier.	
*Scott, Warren F.	1st Lieut.	Whittington, A. C.	1st Lieut.
Allendale.		Bourg.	
Lambeth, Walter P.	1st Lieut.	Parker, Prentiss E.	1st Lieut.
Amite.		Bunkie.	
Adams, James Moore.	1st Lieut.	Davis, David Benj.	1st Lieut.
Angie.		Matthews, Edgar S.	1st Lieut.
McNeese, William T.	Captain	Buras.	
Athens.		*Ballowe, Hewitt L.	1st Lieut.
Atkins, William L.	1st Lieut.	Burrwood.	
Baton Rouge.		*Trepagnier, Dalton H.	Captain
Dougherty, John Allen.	1st Lieut.	Clarks.	
*McKowen, John	1st Lieut.	King, Brinsfield	1st Lieut.
McVea, Chas. (Pres. Examinin-		Colfax.	
ing Board M. R. C.) ...	Captain	Chapman, John S. C.	1st Lieut.
Robert, James John.	Captain	Sherrill, J. Johnston.	1st Lieut.
Tucker, James Arthur.	1st Lieut.	Columbia.	
Whitaker, Edward V.	1st Lieut.	Sherman, Dollie O.	1st Lieut.

	Rank.
Crowley.	
Raney, Ralph B.....	1st Lieut.
DeRidder.	
Turner, S. O.....	1st Lieut.
Elizabeth.	
*Gaulden, Charles L.....	1st Lieut.
Elm Grove.	
Crow, Harper L.....	1st Lieut.
Ferriday.	
Maxwell, Victor W.....	1st Lieut.
Fullerton.	
Talbot, M. W.....	1st Lieut.
Gilbert.	
Gill, D. Denson.....	1st Lieut.
Glenmora.	
Reid, William E.....	1st Lieut.
Gonzales.	
LeSeur, George B.....	1st Lieut.
Hodge.	
Mosely, Charles H.....	1st Lieut.
Hosston.	
Collins, Matthias C.....	1st Lieut.
Houma.	
St. Martin, Thaddeus I...	1st Lieut.
Independence.	
Alessi, Nicolo V.....	1st Lieut.
Jackson.	
Evans, T. Watkins.....	1st Lieut.
Jena.	
Coleman, James A.....	1st Lieut.
Jonesboro.	
Simonton, Edwin C.....	1st Lieut.
Kelly.	
Cracroft, Thomas B.....	1st Lieut.
Lafayette.	
Lee, George W.....	1st Lieut.
Lake Charles.	
Iles, D. C.....	1st Lieut.
*Martin, John G.....	Captain
Roy, T. S.....	1st Lieut.
Watkins, Thomas H.....	Captain
Lake Providence.	
Hamley, William H.....	1st Lieut.
Lecompte.	
*Lett, Frank M.....	Captain
Leesville.	
Palmer, Neely McC.....	1st Lieut.
Willis, Daniel O.....	1st Lieut.
Locust Ridge.	
Adams, James M.....	1st Lieut.
Longville.	
Miller, Erastus L.....	1st Lieut.

	Rank.
Melville	
Williams, Lester J.....	1st Lieut.
Merryville.	
Windham, Robert E.....	1st Lieut.
Monroe.	
*Faulk, L. B.....	1st Lieut.
Graves, James Q.....	1st Lieut.
Hirsch, David I.....	1st Lieut.
Montrose.	
Kelly, John L.....	1st Lieut.
Napoleonville.	
Pugh, William W.....	1st Lieut.
Newellton.	
Evans, Ralph P.....	1st Lieut.
New Orleans.	
Ayres, Charles C. (Marine Hospital).	1st Lieut.
*Bahn, Chas. A. (Tulane Unit, Red Cross No. 24)...	1st Lieut.
Barkley, Claude D.....	1st Lieut.
*Bethea, J. A. (Medical Corps, U. S. A., in France)...	1st Lieut.
*Bird, T. B.....	1st Lieut.
*Bowie, E. R. (Touro Intern), Tulane Unit Red Cross, No 24)	1st Lieut.
*Bradburn, Muir (Tulane Unit Red Cross, No. 24)...	1st Lieut.
Brown, Frederick T.....	Captain
Buffington, W. R.....	1st Lieut.
*Burgheim, C. A. (Ft. Ogle- thorpe).	1st Lieut.
Calloway, Wm. O.....	1st Lieut.
Carter, Charles S.....	1st Lieut.
*Carter, P. J. (Tulane Unit Red Cross, No. 24)...	1st Lieut.
Clark, S. M. D.....	1st Lieut.
*Cronan, George A.....	1st Lieut.
Dauterive, Henry J.....	1st Lieut.
*Dicks, Jno. F. (Tulane Unit Red Cross, No. 24)...	1st Lieut.
Dowling, Oscar, (State Com- mittee of National Defense and Executive Committee, Medical Section)	Major
*Dyer, Isadore (President Ex- amining Board, Medical Reserve Corps, and Chair- man Medical Section, State Committee of National De- fense).	Major
Edrington, N. K.....	1st Lieut.

	Rank.		Rank.
*Elliott, John B., Jr. (Director, Tulane Unit Red Cross, No. 24)	Major	Levy, Lewis H.	1st Lieut.
*Fenner, E. D. (Tulane Unit Red Cross, No. 24) . . .	Captain	*Lopez, L. V. J. (DeLeon Springs)	1st Lieut.
*Ficklen, E. P. A. (Tulane Unit Red Cross, No. 24) . . .	1st Lieut.	*Maes, Urban (Assistant Director, Tulane Unit Red Cross, No. 24)	Major
*Fortier, Lucien A.	1st Lieut.	Mailhes, R. J. (Charity Hospital Intern)	1st Lieut.
*Genella, L. J. (in France)	1st Lieut.	*Martin, T. W.	1st Lieut.
*Gerson, G. R. (Charity Hospital Intern)	1st Lieut.	Matas, Rudolph (Organizing Director Tulane Unit Red Cross, No. 24, and member of Committee of National Defense for Louisiana) . .	Major
Gessner, H. B.	Captain	*Mereaux, L. A. (Jackson Barracks)	1st Lieut.
Gladden, A. H., Jr. (Charity Hospital Intern)	1st Lieut.	Milholland, W. G. (Intern, Presbyterian Hospital) . .	1st Lieut.
*Gondolph, H. J. (Fort Sam Houston)	1st Lieut.	Miller, C. Jeff (Chairman District Exemption Board and member Executive Committee, Medical Director State Committee on National Defense)	Captain
*Graham, R. E. (Medical Corps, U. S. A., in France) . . .	1st Lieut.	Murphy, D. J.	1st Lieut.
Griffith, Thomas H. D. (Marine Hospital)	Captain	Newhauser, M. A.	1st Lieut.
*Guthrie, J. B. (Medical Department at Alexandria) . .	Major	O'Ferrall, J. T.	Captain
*Halsey, J. T. (Adjutant, Tulane Unit Red Cross, No. 24)	Captain	Page, J. H.	1st Lieut.
*Huhner, E. J. (in Oglethorpe)	1st Lieut.	Parham, F. W. (Member State Committee on National Defense)	Major
Humphreys, R. W.	1st Lieut.	Perdue, J. D.	1st Lieut.
Humphreys, S. R. (Charity Hospital Intern)	1st Lieut.	Perkins, R. T.	1st Lieut.
Israel, J. P.	1st Lieut.	*Perkins, W. M. (Member Examining Board, Medical Reserve Corps)	1st Lieut.
*Jamison, S. C. (Tulane Unit Red Cross, No. 24) . . .	1st Lieut.	*Pratt, John G. (Charity Hospital Intern)	1st Lieut.
*Jones, W. O'D. (Tulane Unit Red Cross, No. 24) . . .	1st Lieut.	Reilley, W. H.	1st Lieut.
*Kearney, H. R. (Tulane Unit Red Cross, No. 24) . . .	1st Lieut.	Reynaud, L. F.	Captain
King E. L.	1st Lieut.	Richards, W. T.	1st Lieut.
Kohlmann, Wm.	Captain	Samuel, E. C.	1st Lieut.
Kushner, L. Z. (Charity Hospital Interne)	1st Lieut.	*Seemann, W. H. (Surgeon at Jackson Barracks, member Medical Section State Committee of National Defense)	Captain
*La Croix, Paul G. (Tulane Unit Red Cross, No. 24) . . .	1st Lieut.	*Sharp, Covington H. . . .	1st Lieut.
Landry, L. H.	1st Lieut.	*Smyth, John (Tulane Unit Red Cross, No. 24) . . .	Captain
Landry, O. W. (colored) . .	1st Lieut.	Souchon, Edmond	Major
*Lanford, J. A. (Tulane Unit Red Cross, No. 24) . . .	Captain	Souchon, Marion S.	Major
*Lee, Jesse W. (Jackson Barracks)	1st Lieut.		
*Lemann, Isaac I. (Tulane Unit Red Cross, No. 24) . . .	Captain		

	Rank.		Rank.
*Terhune, Wm. B. (in France).....	1st Lieut.	*Lloyd, Thomas P.....	Captain
Tucker, I. N.....	1st Lieut.	Mills, J. C.....	1st Lieut.
*Wall, C. K. (Tulane Unit Red Cross, No. 24).....	1st Lieut.	Prudhomme, Peter W....	1st Lieut.
*Weis, J. D. (Tulane Unit Red Cross, No. 24).....	Captain	Ragan, Thomas.....	1st Lieut.
		Ramsay, George A.....	1st Lieut.
		Rutledge, Clifford D....	1st Lieut.
		Seofield, Harry W.....	1st Lieut.
		Wallace, W. (colored)...	1st Lieut.
		Willis, James C.	1st Lieut.
		Willis, James G. ..	1st Lieut.
New Roads.		Slidell.	
Cazayoux, Joseph F.....	1st Lieut.	Brazier, A. W. (colored).	1st Lieut.
Norwood.		Spencer.	
Mengis, Christopher L....	1st Lieut.	Wheelis, Allen B.....	1st Lieut.
Oscar.		St. Martinsville.	
*Major, Eric L.....	1st Lieut.	Fleming, Patrick H.....	1st Lieut.
Rougon, Francis F.....	1st Lieut.	Trout.	
Pelican.		Zeagler, Allen J.....	1st Lieut.
Burdette, James C.....	1st Lieut.	Ward.	
Plaquemine.		Whitley, Grover G.....	1st Lieut.
Landry, Adrian A.....	1st Lieut.	Waterproof.	
Poydras.		Marion, Joseph	1st Lieut.
*Dunshie, John F.....	1st Lieut.	White Castle.	
Rayville.		Owen, Whyte Glendower...	Major
Sartor, James C.....	1st Lieut.	Winnfield.	
Selma.		Kelly, Daniel W.....	1st Lieut.
Adams, Isaac N.....	1st Lieut.	Winnsboro.	
Shreveport.		Pittman, John S.....	1st Lieut.
Boënheim, J. M.....	1st Lieut.	Martin, Claude A.....	1st Lieut.
Dickson, George B.....	1st Lieut.	Yelgar.	
Furman, Francis	1st Lieut.	Palmer, Alonzo T.....	1st Lieut.
Garrett, Brook C.....	1st Lieut.	Zona.	
Heath, Arthur G.....	1st Lieut.	Jones, H. Varnado.....	1st Lieut.
Hunt, Randell	Captain		
Lawrason, George B.....	Captain		

Note.—Any correction will be welcomed by the Committee.

All additional Reserve Corps officers recommended will be published as soon as **official** report is received of such.

Any news of officers on duty, concerning their station or movements, will be published by the Committee.

NEWS.

A commission for examining soldiers in camps at Fort Sam Houston has been on duty since the middle of July, consisting of Drs. Edmond Moss, James C. Cole, Robert Bernhard, H. J. Gondolf, of New Orleans, and Robert A. Strong, of Pass Christian, Miss., all members of the teaching staff of Tulane University. A like commission will be organized and assigned for duty at Louisiana camps as soon as troops are assigned.

The Red Cross Base Hospital, Unit 24, organized by members of the Faculty of the School of Medicine of Tulane University and known as the "Tulane Unit," left on Tuesday, September 5, for Fort Oglethorpe, en route for France.

The following constituted the medical and surgical staff:

Majors John B. Elliott, Jr., M. R. C., Director; Urban Maes, M. R. C., head of the Surgical Division; Captains John T. Halsey, M. R. C.; Erasmus D. Fenner, M. R. C.; John Smyth, M. R. C.; Charles T. Chamberlain, M. R. C.; Joseph D. Weis, M. R. C.; Isaac Ivan Lemann, M. R. C.; John A. Lanford, M. R. C.; Lieutenants S. Chaillé Jamison, M. R. C.; E. P. A. Ficklen, M. R. C.; Charles A. Bahn, M. R. C.; Harold F. Kearney, M. R. C.; Paul G. La Croix, M. R. C.; Muir Bradburn, M. R. C.; Warren T. Scott, M. R. C.; Phillips J. Carter, M. R. C.; W. O'D. Jones, M. R. C.; C. K. Wall, M. R. C.; E. R. Bowie, M. R. C.; S. King Rand, M. R. C.; G. E. Sandoz (Dental Reserve), A. Meynier (Dental Reserve). Captain B. B. Ballanfant, Q. M. C., U. S. A., is the Quartermaster in charge.

This unit has the distinction of being the first and only unit from the South going to the front. It leaves with complete equipment, full corps of nurses and non-commissioned personnel and with several ambulances donated by patriotic and generous New Orleans citizens.

Pay and Allowance of the Medical Reserve Corps Members and Other Service Conditions.

In making recommendation for original *commission, age, professional attainments and previous military experience are the chief considerations in determining the grade in which the applicant should be commissioned.

1. The pay of the different grades is: First lieutenant, \$2,000; captain, \$2,400; major, \$3,000.

When assigned to duty in a city (not in camp, thus not serving with troops) the assignment carries with it commutation of quarters: First lieutenant, three rooms; captain, four rooms; major, five rooms, at \$12 per room; heat and light additional.

2. Acceptance of a commission in the Medical Reserve Corps automatically places your services at the disposal of the Surgeon General wherever he deems them most valuable, either in the United States or abroad.

COMMISSIONED FOR FIVE YEARS.

3. Acceptance of commission is for five years, unless sooner relieved from active duty on recommendation of the Surgeon General, when officers will be placed on the inactive list. Active duty in the present instance will naturally be for the length of the war plus four months, which will be required for the necessary physical examinations to be made of the men before they are discharged from the army. The old requirement of three years' service, including at least ninety days' active service before being eligible for promotion, has been eliminated.

4. In case of death from causes in line of duty the government pays to the widow or designated beneficiary six months' pay of the grade held by the deceased at the time of death. The deceased's family is also entitled to a pension.

5. The limited number of quarters at the majority of stations and camps make it inadvisable for officers of the Reserve Corps to be accompanied by their families, unless they can provide for them independently.

6. In no event will the families of officers be allowed to accompany them abroad.

7. Officers of the Medical Reserve Corps under the age of forty-five years will be called for training in the medical officers' training camps. This is for the purpose of giving intensive training in administrative duties, a requirement for military service. Men over forty-five years, if they so elect, may attend a medical officers' training camp. If a surgeon has had military training, he may be called, without camp instruction, for active duty.

Army Insignia, Indicating Rank, Branch of the Service, and Personal Record, Worn by Officers and Soldiers.

The uniform of the United States Army stands for democracy. It is almost the same for all ranks from private to Commanding General—so much so, in fact, that it is often difficult to recognize a man's place in the service at first glance. But a closer view will tell the whole story to any experienced observer.

"Insignia" is the term used to include all the badges, buttons, braids, hat cords, and other devices, which indicate these three things:

1. The rank of each officer or soldier.
2. His branch of the service or his special duties.
3. His personal experience or record.

INSIGNIA OF RANK.

Above the non-commissioned officers, rank is shown by various insignia on the shoulder loops of coats, on the sleeves of coats and overcoats, on the collars of shirts, and by hat cords. The most important are those made of metal and sewn or pinned on the shoulder loops and shirt collars. A Major General has two silver stars; a Brigadier General, one silver star; a Colonel, a silver eagle; a Lieutenant-Colonel, a silver oak leaf; a Major, a gold oak leaf; a Captain, two silver bars, and a First Lieutenant, one silver bar. A Second Lieutenant has no shoulder insignia. You can readily tell the rank of any officer by glancing at these metal insignia.

It is often quite necessary, however, to recognize that some one at a little distance is a commissioned officer in order that you may treat them with the courtesy due to all officers. In this case you look for the marks indicating that a man holds a commission without waiting to observe his exact rank. Until recently, commissioned officers customarily wore leather leggings, while all enlisted men wore canvas leggings. However, leather leggings may now be worn by mounted men. The hat cord is another mark of rank which is easily observed; the hat cords of Generals are gold; those of other officers are of gold and black. Another mark of an officer is a band of brown braid about three inches from the end of the coat sleeve. Officers of the General Staff Corps wear black braid instead of brown. On overcoats the braid is sewn on in loops, except that of general officers, who wear two black bands of braid.

Medical Officers' Training Camps.

Allentown, Pa.: 150 students (Ambulance Corps).

Fort Benjamin Harrison, Ind.: 1,200 students.

Fort Des Moines, Iowa: 75 students (colored).

Fort Oglethorpe, Ga.: 1,300 students.

Fort Riley, Kans.: 900 students.

Total approximate numbers attending, 3,625 students.—*Official Bulletin.*

The Medical Section of the State Committee of National Defense.

The Medical Section of the State Committee on National Defense, under joint instruction from the American Red Cross and from the Council of National Defense, is to consist of the original committees for Louisiana of the Red Cross and on Medical Per-

paredness, together with the medical member of the State Committee of National Defense appointed by the Governor, the President and Secretary of the State Medical Society, the ranking medical officer of the Louisiana National Guard, the Surgeon of Jackson Barracks, the deans of the medical schools in the State, the officers of the Medical Reserve Corps, and other citizens who have aided in medical preparedness.

The Committee has, therefore, been organized accordingly, including also the chairmen of the Parish Auxiliary Defense Committees, so far as these have responded. A number of parishes have failed to act. As soon as the tardy parishes have reported, the chairmen of committees of these will be added.

PERSONNEL OF MEDICAL SECTION.

All of the Commissioned Officers of the Medical Reserve Corps.

Dr. Charles L. Chassaignac, New Orleans, Dean Graduate School of Medicine, Tulane University of Louisiana.

Dr. S. M. D. Clark, Lieutenant, M. R. C., New Orleans, member and Chairman of the original Committee.

Dr. L. R. DeBuys, New Orleans, Secretary Louisiana State Medical Society and member of original Committee.

Dr. Oscar Dowling, New Orleans, President State Board of Health and member of State Committee of National Defense.

Dr. Homer Dupuy, New Orleans, Dean Post-Graduate Medical School of Loyola University.

Dr. Isadore Dyer, New Orleans, member of original Committee and Dean Tulane School of Medicine.

Dr. Hermann B. Gessner, New Orleans, member of original Committee.

Dr. J. B. Guthrie, New Orleans, member of original Committee.

Dr. Randell Hunt, Shreveport, Captain M. R. C. and member from Shreveport.

Dr. H. W. Kostmayer, New Orleans, Staff, New Orleans Charity Hospital.

Dr. W. W. Leake, New Orleans, Staff Illinois Central Hospital.

Dr. E. L. Leckert, New Orleans, member from New Orleans.

Dr. Rudolph Matas, New Orleans, Major, M. R. C., and State member of Committee of National Defense.

Mr. Fred Matthews, New Orleans, Secretary New Orleans Charity Hospital.

Dr. Charles McVea, Baton Rouge, Captain, M. R. C., and President Examining Board for Medical Reserve Corps.

Dr. C. Jeff Miller, New Orleans, Captain, M. R. C., and member of original Committee.

Dr. P. J. O'Kelly, New Orleans, Staff, Presbyterian Hospital.

Dr. J. A. O'Hara, New Orleans, member from New Orleans.

Dr. W. Glendower Owen, Whitecastle, Major, M. R. C.

Dr. Frederick W. Parham, New Orleans, Major, M. R. C., and member of original Committee.

Dr. W. M. Perkins, New Orleans, Lieutenant, M. R. C., and member of Examining Board, M. R. C.

Dr. Clarence Pierson, Jackson, President Louisiana State Medical Society.

Dr. O. L. Pothier, New Orleans, Major and ranking medical officer Louisiana National Guard.

Dr. W. H. Seemann, New Orleans, Captain, M. R. C., Surgeon-in-Charge, Jackson Barracks, and member of original Committee.

Dr. Marion Souchon, New Orleans, Major, M. R. C., and Staff Hotel Dieu.

Dr. S. W. Stafford, New Orleans, Superintendent, New Orleans Charity Hospital.

Mr. A. B. Tipping, New Orleans, Superintendent of Touro Infirmary.

All Chairmen of Parish Auxiliary Defense Committees.

Allen—Dr. C. Louis Gaulden, Elizabeth.

Bossier—Dr. D. J. McAnn, Atkins.

Caddo—Dr. J. C. Willis, Shreveport (also member of original Committee).

Catahoula—Dr. E. R. Yancey, Jonesville.

Claiborne—Dr. C. C. Craighead, Athens.

East Carroll—Dr. W. H. Hamley, Lake Providence.

Evangeline—Dr. J. C. Vidrine, Vidrine.

Jefferson Davis—Dr. N. S. Craig, Jennings.

Morehouse—Dr. O. M. Patterson, Bastrop.

Orleans—Dr. J. F. Cocker, New Orleans.

Plaquemines—Dr. H. L. Ballowe, M. R. C., Buras.

Richland—Dr. H. C. Chambers, Girard.

Point Coupee—Dr. R. M. G. Carruth, New Roads.

St. Martin—Dr. P. H. Fleming, St. Martinville.

Tangipahoa—Dr. E. L. McGehee, Hammond.

Union—Dr. R. L. Love, Farmerville.

Washington—Dr. E. E. Lafferty, Bogalusa.

Executive Committee.

OSCAR DOWLING,

E. L. LECKERT,

CHAS. McVEA,

C. JEFF MILLER.

S. W. STAFFORD.

ISADORE DYER, Chairman.

L. R. DEBUYS, Secretary-Treasurer.

N. B.—Other parishes not yet heard from.

NEWS AND COMMENT

THE ST. JOHN-ST. CHARLES BI-PARISH MEDICAL SOCIETY held its regular quarterly meeting on September 5, at Reserve, La., with the following members present: Dr. L. T. Donaldson, Sr., vice-president and acting president; Drs. S. Montegut, L. A. Caboche and L. Cheves Tebo, secretary-treasurer.

THE UNITED STATES CIVIL SERVICE COMMISSION announces an open competitive examination for physician, for men only, to fill vacancies in the positions of physician in the Indian and Panama Canal services, acting assistant surgeon in the Public Health Service, surgeon in the Coast and Geodetic Survey, etc. Salaries will range from \$480 to \$1,800 per year, according to the time and service, except in the Philippines, where the allowance for subsistence is \$2.50 per diem. Until further notice, and on account of the urgent needs of the service, applications will be received at any time. Papers will be rated promptly and certification made as the needs of the service require. For further information, apply for Form 1312, stating title of the examination required, to the Civil Service Commission, Washington, D. C., or to the secretary, United States Civil Service Board, in the various cities in the United States and its possessions.

COMMISSIONED MEDICAL RESERVE OFFICERS.—The number of commissioned medical reserve officers, up to August 23, passed 9,000. The number recommended by the Surgeon-General for commissions is approximately 15,000. He estimated that 5,000 more would be needed in the near future. This will require an intensified campaign in every State in order to get the desired number.

CULTURES TO BE HANDLED BY THE TRUSTWORTHY.—At the suggestion of Surgeon-General Blue, of the U. S. Public Health Service, the State Committee of National Defense, Medical Section, have been asked to communicate with all pathologists, bacteriologists and scientific workers who may have in their possession cultures of virulent bacteria, and caution them against entrusting such cultures to others than those in whom absolute confidence can be placed. This applies to the bacteria pathogenic to both man and animals.

MAJOR HIGHEST RANK.—Although the Medical Reserve Corps will number at least 20,000 officers, many of them of the highest qualifications, no commission higher than Major can be granted to them. If the Owen amendment to Senate Bill 1786 is passed, one Major-General and one Brigadier-General will be created in the M. R. C. for each 400 officers, with four Colonels and four Lieutenant-Colonels in every hundred officers. This change is found necessary in order that M. R. C. officers abroad may not rank inferiorly to men of similar qualifications in the armies of the Allies.

DEMONSTRATIONS BY DR. CARREL AND OTHERS.—On August 12, after the meeting of the General Medical Board at the Rockefeller Institute, New York City, Dr. Carrel gave a brief description of the technic elaborated by himself and Dr. Dakin and exhibited a series of pictures and results of their methods in the conservation of life and limb. Dr. LeConte, of Philadelphia, presented the claims of dichloramine-T, Dakin's latest antiseptic preparation, twenty times as powerful as the watery solutoin used in the Carrel method, dissolved in oil of eucalyptus and applied by a spray. The claim for superior merit is based on an experience of over 4,000 cases at the hands of Lea, of the Pennsylvania Hospital, and its entire junior staff, and Cummins, surgeon to the Midvale Steel Corporation. Dr. Bull gave an astonishing laboratory exhibition of his recently elaborated gas gangrene bacillus antitoxin, showing animals enormously distended and with great rapidity, by injection of the toxin; others protected by injection of the antitoxin, showing, moreover, that in animals the previous injection of the antitoxin protects against a léthal dose of the active bacillus, and that, after the development of cases of gangrene, both growth and toxic absorption are inhibited by the injection of antitoxin. Dr. Meltzer gave a convincing demonstration of both the efficiency and simplicity of his method of artificial respiration. There followed an inspection of the first completed military hospital.

THE AMERICAN PUBLIC HEALTH ASSOCIATION CONGRESS that was to be held in New Orleans in December has decided to meet in Washington, D. C. This is because war hygiene is a subject of such importance at the present time that the congress believes it can better help solve the war problems from the sanitary standpoint by making this change.

THE CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA, which was scheduled to hold its annual meeting in New York, has changed its plans. Preliminary plans have been made for a "War Convention" to be held in Chicago during the week of October 22.

FRENCH EMBARGO ON MAGNESIA.—By cablegram from Paris, August 7, the American consul-general announced that, after August 9, magnesia and carbonate of magnesia, subject to the usual exceptions, would no longer be exported from France.

STATUS OF MEDICAL STUDENTS AND HOSPITAL INTERNS FOR WAR SERVICE.—The Provost Marshal General has sent the following to Governors of all States::

"The President prescribes the following supplemental regulations governing the execution of the selective service law:

"First.—Hospital interns who are graduates of well-recognized medical schools or medical students in their fourth, third or second year in any well-recognized medical school who have not been called by the local Board may enlist in the Enlisted Reserve Corps provided for by Section 55 of the National Defense Act, under regulations to be issued by the Surgeon-General, and if they are thereafter called by a local Board they may be discharged on proper claim presented, on the ground that they are in the military service of the United States.

"*May Apply for Discharge.*—Second. A hospital intern who is a graduate of a well-recognized medical school or a medical student in his fourth, third or second year in any well-recognized medical school, who has been called by a local Board and physically examined and accepted, and by or in behalf of whom no claim for exemption or discharge is pending, and who has not been ordered to military duty, may apply to the Surgeon-General of the Army to be ordered to report at once to a local Board for military duty, and thus be inducted into the military service of the United States, immediately thereupon to be discharged from the National Army for the purpose of enlisting in the Enlisted Reserve Corps of the Medical Department. With every such request must be enclosed a

copy of the order of the local Board calling him to report for physical examination (Form 103), affidavit evidence of the status of the applicant as a medical student or intern, and an engagement to enlist in the Enlisted Reserve Corps of the Medical Department.

"Will Not Be sent to Camp.—Upon receipt of such application, with the named enclosures, the Surgeon-General will forward the case to the Adjutant General with his recommendations. Thereupon the Adjutant General may issue an order to such intern or medical student to report to his local Board for military duty on a specified date, in person or by mail or telegraph, as seems most desirable. This order may issue, regardless of the person's order of liability for military service. From and after the date so specified, such person shall be in the military service of the United States. He shall not be sent by the local Board to a mobilization camp, but shall remain awaiting the orders of the Adjutant General of the Army. The Adjutant General may forthwith issue an order discharging such person from the military service for the convenience of the government.

"Three official copies of the discharge order should be sent at once by the Adjutant General to the local Board. Upon receipt of these orders the local Board should enter the name of the man discharged on Form 164A and forward Form 164A, together with two of the certified copies of the order of discharge, to the mobilization camp to which it furnishes men. The authorities at the mobilization camp will make the necessary entries to complete Form 164A, and will thereupon give the local Board credit on its net quota for one drafted man."

MISSISSIPPI VALLEY ASSOCIATION MEETING.—The forty-third annual meeting of the Mississippi Valley Medical Association will be held at the Hotel Secor, Toledo, October 9-11, under the presidency of Dr. Channing W. Barrett, Chicago. On the last day of the meeting a joint session will be held with the Inter-State Association of Anesthetists. The principal symposiums will be on "Surgery of the War," "Otology and Ophthalmology," "Goiter," and "Syphilis." Dr. Joseph C. Bloodgood, Chicago, will deliver the oration in surgery.

HOOKEWORM IN RECRUITS.—The discovery of forty-seven cases of hookworm in seventy-five recruits mobilized for war service has caused the U. S. Public Health Service to recommend the prompt examination for hookworm of all units of the National Guard and National Army, especially those from the South.

SCHOOL FOR CRIPPLED AND BLIND.—Mr. Jeremiah Milbank, of New York City, has contributed \$50,000 towards the establishment of a Red Cross institute for teaching crippled and blind men to be self-supporting. Edward T. Devine, of the New York School of Philanthropy, is now in France studying the method of teaching the blind and cripples in the reëducational schools of France.

NURSES GRADUATE AT HOTEL DIEU.—The graduating exercises of the Hotel Dieu Training School for Nurses (New Orleans) were held on September 6, 1917. Dr. E. M. Souchon addressed the nurses and Dr. E. S. Lewis conferred the diplomas. Twelve were awarded diplomas.

MEETING OF MILITARY DENTAL SURGEONS.—The annual meeting of the Association of Military Dental Surgeons of the United States will be held at Hotel Astor, New York, on October 23. All dentists, commissioned or otherwise, are invited to attend. Papers will be read by dental surgeons of the regular army on subjects of interest to military dental surgeons.

TO STANDARDIZE HOSPITALS.—A fund of \$500,000 has been established by the American College of Surgeons for the purpose of conducting a ten-year investigation of the hospitals of this country. A national board of physicians and surgeons has been appointed to carry on this work of standardizing hospitals.

GIFT TO HOSPITAL.—Mount Sinai Hospital has received more than \$150,000, bequeathed by Julian A. Hellman, of New York, for reasearch work in discovering a cure for cancer.

ZINC OXIDE CONTAINS LEAD.—The Bureau of Chemistry of the United States Department of Agriculture recently found that nearly all of the samples of oxide of zinc examined contained an excessive amount of lead, and that very little oxide of zinc on the market in the United States complies with the standards of the United States Pharmacopœia. Physicians may protect themselves and their patients from possible injury by calling for U. S. P. zinc oxide on their prescriptions, which may be obtained from the limited supply of this material.

PERSONALS.—Among the doctors in New Orleans who have returned from their summer vacations and resumed practice are: Drs. H. B. Gessner, R. C. and W. M. Lynch, Chas. Chassignac, A. S. Yenni, J. M. Batchelor, Theo. F. Kirn, Wm. G. Troescher, Geo. S. Bel, Maurice Feingold, W. W. Butterworth, J. L. Purser, L. J. Stumpf and Allen Eustis.

A cable has been received from Dr. J. S. Ullman, of Natchez, Miss., captain in the United States Medical Reserve Corps, announcing his safe arrival in France.

Col. James S. Gasaway, Senior Surgeon, retired, United States Health Service, was in New Orleans last month visiting his son, Capt. Gerrish Gassaway, of the Washington Artillery. Col. Gasaway was formerly stationed in New Orleans at the United States Marine Hospital.

Dr. J. T. O'Ferrall (New Orleans) sailed for France to join the Orthopedic Unit under Mr. Robert Jones, the celebrated English orthopedic surgeon. Capt. O'Ferrall will remain in this work until the expiration of the war.

REMOVALS.—*Journal of the Oklahoma State Medical Association*, from 508 Barnes Building, to 307 Surety Building, Muskogee, Okla.

Dr. H. Buck, from Kinder to Evergreen, La.

Dr. L. V. Lopez, M. O. R. C., from Godchaux Building, New Orleans, to Fort Russell, Wyoming.

Dr. W. B. Terhune, from East Louisiana Hospital for the Insane, Jackson, to 4516 Perrier street, New Orleans.

Dr. T. W. Evans, from the Louisiana Hospital for the Insane, Jackson, to Base Hospital No. 1, Fort Sam Houston, Texas.

Dr. H. Jenkins, M. O. R. C., Company 10, from Eunice, La., to Fort Riley, Kans.

Dr. P. Graffagnino, to 815 Whitney-Central Building, New Orleans.

Dr. J. H. Ellis, to 1632 Dryades street, New Orleans.

Drs. F. A. Larue and P. L. Thibaut, from Tulane-Newcomb Building, to 1230 Maison Blanche Building, New Orleans.

MARRIED.—At Houston, Texas, on August 2, 1917, Dr. Rhett Goode Korniker, of McNary, La., to Miss Elizabeth Gokey.

On September 5, 1917, Dr. Peter Blaise Salatich to Miss Gladys Claire Malter, both of this city.

DIED.—On September 2, 1917, from automobile accident, in New Orleans, Dr. Delphin Bienvenu, aged 81. Dr. Bienvenu was the oldest living graduate of Spring Hill College, Mobile, Ala., and was an active physician in New Orleans from the close of the Civil War up to a few years ago.

BOOK REVIEWS AND NOTICES

All new publications sent to the JOURNAL will be appreciated and will invariably be promptly acknowledged under the heading of "Publications Received." While it will be the aim of the JOURNAL to review as many of the works accepted as possible, the editors will be guided by the space available and the merit of respective publications. The acceptance of a book implies no obligation to review.

Anatomical Names, by A. C. Eycleshymer, D. M. Shoemaker and Roy L. Moodie. William Wood & Co., 1917.

The object of this book is a further aid toward accomplishing the much-needed discarding of the 45,000 superfluous and confusing anatomical names and toward inducing familiarity with the strict use of the 5,000 internationally accepted names in their stead.

It is unnecessary to repeat here the many self-evident and accepted reasons for the universal use of one single set of names for the structures of the body and for the use of the "BNA" as that set. While the "BNA" (*Die im Basle Nomina Anatomica genommen*) is not, and cannot be expected to be, as yet absolutely perfect and complete, its use by teachers and students is so recognized as necessary to avoid confusion and conserve so large a proportion of the student's energy otherwise exhausted in the memory effort entailed, that its use has come to be one of the criteria by which the grade of a school and the men in a school may be judged. Beyond departments of anatomy, the surgeons and clinicians are heartily coöperating by adoption and use of the terms. However, some pathologists of fair standing are still using the peculiar language constructed among themselves. If these latter would but adopt a strict use of the "BNA" their descriptions of their variations from normal structures would be immediately intelligible to the student knowing his anatomy, and the frequent impression of enforced narrowness and desired mysticism in their science would be removed. Further, the pathologists would be induced to use more knowledge of actual accepted anatomy in their teaching.

The preface of the book gives a brief history of anatomical names from the beginnings of science, the gradual growth of a Babel of names, a statement of the conception, in 1887, of a commission for coöperation in choosing a set of names for universal use, and the history of the appointment of such a commission. Though the idea of the commission was born at a meeting of anatomists in Leipsig, the final personnel of the commission included 129 members from other countries than Germany.

Next follows an excellent translation and adaptation of the report by Prof. His of the productive meeting of the commission in Basle in 1895, at which most of the names now comprising the "BNA" were adopted. This report gives not only the well-known classified list of the names chosen, but also useful reports of the discussions of the rules governing the actions of the commission and of the debates and reasons for the adoption of certain names, the use of which might be questioned.

By no means the least valuable part of the book is a section of "Biographical Sketches" contributed especially by Prof. Moodie. This comprises brief sketches of some 800 of the leading anatomists of the world, exclusive of the living. Under the name of each is given his nationality, profession, places and dates of birth and death, positions

held, important discoveries, chief anatomical writings, and the anatomical structures at times associated with his name. It is not only of general interest, but it is most valuable as a handy reference from which the student may learn of a man whose name at times may be given with the name of a structure in the body.

Nearly half of the text is an "Index and Synonym Register." This comprises the distinctive purpose of the book. It contains a much-needed and the only existing alphabetically arranged complete list of the "BNA" terms, and, more, it incorporates some 20,000 of the older terms synonymous with the "BNA," each of which bears a numeral citing its equivalent "BNA" term. Thus, by it, the student, given one of the older terms, may easily determine the correct name that should have been given.

IRVING HARDESTY.

Principles of Pharmacy, by Henry V. Arny, Ph. G., Ph. D., F. C. S., Professor of Chemistry in the College of Pharmacy in the Columbia University; sometime Dean and Professor of Pharmacy in the School of Pharmacy of Western Reserve University; member of the Committee on Revision of the United States Pharmacopœia, Ninth Revision; member of the Committee of Revision of the National Formulary, Fourth Edition. Second edition, revised, with 267 illustrations. W. B. Saunders Company, Philadelphia and London, 1917.

To write a textbook on the subject of pharmacy, embracing, as it does, so many collateral branches of science, is truly a gigantic task, for it must be designed to meet the needs of the drug-store apprentice, the student of pharmacy at school and the finished practicing pharmacist.

Such a book must be written by one who knows whereof he speaks and who possesses the happy faculty of presenting facts in a clear and comprehensive manner. That Dr. Arny has met these requirements in a masterful way is evidenced by the cordial reception accorded the first edition of his work.

The advent of the ninth revision of the United States Pharmacopœia and the fourth edition of the National Formulary has brought the need of the second edition. While the rapid strides made in pharmacy, medicine and chemistry have made a radical revision of the work necessary, we are glad to note that the author has adhered to the same excellent arrangement of subjects, dividing the book into several distinct parts and subdividing each part into chapters. It is to be regretted, however, that in the new edition all of the recipes for official galenical preparations are given in condensed form, the reader being referred to the U. S. P. for details.

The same criticism applies to official compounds, where only a summarized description is given.

There are two features of Dr. Arny's book which make it unique and invaluable, one being the "Remarks" following each subject throughout the book and answering the "whys" suggested in the text; the other is the helpful list of bibliographical references to be found at the end of each chapter. Striking features also are those parts discussing the arithmetic of pharmacy, the prescription and the outline of laboratory work.

The book contains 267 well-chosen illustrations. Truly the work is exhaustive, without being exhausting, and we know of no treatise so well adapted to the needs of the pharmacist.

GEO. S. BROWN.

Diagnosis from Ocular Symptoms, by Matthias Lanckton Foster, M. D., F. A. C. S. Reban Company, New York.

Years ago Da Costa's "Medical Diagnosis" was our great work on diagnosis in internal medicine, and it still remains a great work. Other treatises on surgical as well as medical diagnosis have enriched medical literature during the course of the past generation. Such works were rendered necessary by the constant increase in our knowledge of pathology and symptomatology. The process of keeping up with new and valuable facts goes on unremittingly, and new fields are constantly being enlarged or discovered. Such growth in scientific knowledge naturally evolves into specialized departments. An evidence of such a healthy growth is Foster's "Diagnosis from Ocular Symptoms." This volume of nearly 500 pages is arranged in a most orderly and scientific manner, so that it will serve for systematic study as well as for reference.

In his preface the author deplores the fact the arrangement he has adopted gives critics some ground for saying that his method is not a system, but an unscientific lack of one. If any such defect really exists in this grand work, the present reviewer cheerfully confesses his inability to detect it.

There are no illustrations in Foster's work. After mature deliberation he declined the generous offer of his publisher to use illustrations, because he felt that, with earnest seekers after truth, word-pictures should suffice. These pen-pictures "bring out strongly the points through which differentiation is made, and it is practically impossible to present these points in a plate so as to make clear the differentiation between two conditions that closely resemble each other."

The system Foster follows is the well-tried one of taking a cardinal symptom, such as would first hold the attention of the physician as the central figure in the clinical fields, and from this to work outward toward an accurate diagnosis by a process of elimination. Such a method naturally causes a repetition or duplication of material in different parts of the book, but such repetition in no way detracts from the merits of the work.

Dr. Foster has contributed a noteworthy addition to modern ophthalmological literature, and one that seems assured of a long lease of favor among the profession.

McSHANE.

Practical Medicine Series, comprising ten volumes on the year's progress in medicine and surgery. Vol. III. The Eye, Ear, Nose and Throat. Series 1917. The Yearbook Publishers, Chicago.

We have previously had occasion to comment on some numbers of this excellent series of yearbooks. While the series is published primarily for the benefit of the general practitioner, at the same time it is so arranged that specialists in certain lines may buy only those volumes that appeal to them. In the present volume much space has been devoted to the military surgery of the eye, from experience derived in the present world-war. The three departments are ably edited by men who occupy prominent places in their respective specialties, and who, *ex-officio* as teachers, keep themselves posted on all new developments along their chosen line. The present number maintains the high standard that characterizes the entire series.

McSHANE.

Cataract: Senile, Traumatic and Congenital, by W. A. Fisher, M. D., Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College. Chicago: Published by the College, 1917.

This book is small, as books go nowadays, but is a thorough and exhaustive treatise on cataract. It devotes a reasonable amount of space to the historical development of this brilliant phase of ophthalmic surgery, but it is chiefly to be commended for its clear and complete description of the most recent and most fruitful advances in this branch of the medical art. We have already had the pleasure of carefully studying some parts of the present book, since it consists, in large measure, of Fisher's previous contributions to current medical literature. Dr. Fisher describes fully the Smith Indian operation, to see which he journeyed to Amritsar, India, to study the technic in Smith's own vast clinic. Dr. Fisher is no mere compiler of other men's views, for he has devised certain instruments which notably lessen the danger of complications, and he has perfected a technic of his own which places him in the front rank of original workers. Dr. Fisher's book deserves an honored place in the library of every ophthalmologist. McSHANE.

Glaucoma. A Handbook for the General Practitioner, by Robert Henry Elliott, M. D., Lieutenant-Colonel. I. M. S. (retired), etc. Paul B. Hoeber, New York, 1917.

In this monograph of fifty-seven pages the general practitioner will find a clear and safe guide in handling unsuspected cases of glaucoma that are too often set down as mere attacks of trigeminal neuralgia. The incidence of glaucoma is greater than most physicians realize, and, inasmuch as early diagnosis has an important bearing on successful treatment, it needs no arguing to demonstrate to the general practitioner the importance of learning how to differentiate incipient glaucoma from those neuralgic conditions for which a patient usually first consult him instead of an oculist. Dr. Elliott's work is not controversial. His aim has been to be of service to the general practitioner. Dr. Elliott is the originator of sclero-corneal trephining, which has sometimes been confused with other trephining operations, but is essentially different from them. His qualifications to speak on the subject of glaucoma are of the highest. His present small volume will be of great value not only to the general practitioner, for whom it is primarily intended, but to the ophthalmologist as well. Dr. Elliott has a vast amount of material on hand for the preparation of an exhaustive treatise on glaucoma. The present world-war has postponed the appearance of the large work, but, if we may judge from this smaller book, the forthcoming work will be an epochal contribution to ophthalmological literature. McSHANE.

Handbook of Suggestive Therapeutics, Applied Hypnotism, Psychic Science, by Henry S. Munro, M. D. C. V. Mosby Company, St. Louis.

Sifting the mass of material contained in this volume of some 450 pages, one agrees with the contention of the author, that the subject of suggestive therapeutics in America has been woefully neglected, and his book is an excellent argument for a reform. Most of the men in this country who deal with the psychiatric side of medicine and who are qualified to speak have been rather silent with reference to this field of therapeutics, while a number of Europeans have gone far and have labored well. The author of the book in review may serve excellently as an exhorter, and he seems to have had a large experience in his chosen field. We may doubt some of his applications, but there can be no question of his own faith in the possibilities of his endeavor. DYER.

PUBLICATIONS RECEIVED

THE YEARBOOK PUBLISHERS, Chicago, 1917.

The Practical Medicine Series. Volume IV: **Gynecology**, edited by Emilius C. Dudley, A. M., M. D., and Sidney S. Schochet, M. D. Volume V: **Pediatrics**, edited by Isaac A. Abt, M. D., with the collaboration of A. Levinson, M. D.. **Orthopedic Surgery**, edited by John Ridlon, A. M., M. D., with the collaboration of Charles A. Parker, M. D. Series 1917.

W. B. SAUNDERS COMPANY, Philadelphia and London, 1917.

The Roentgen Diagnosis of Diseases of the Alimentary Canal, by Russell D. Carman, M. D., and Albert Miller, M. D.

A Handbook of Practical Treatment, by many writers. Edited by John H. Musser, Jr., B. S., M. D., and Thomas C. Kelly, A. M., M. D. Volume IV.

Desk Index to Musser-Kelly Treatment. Vols. I, II, III and IV.

P. BLAKISTON'S SON & CO., Philadelphia, 1917.

The Diagnosis and Treatment of Tropical Diseases, by E. R. Stitt, Ph. G., M. D. Second edition, revised and enlarged.

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Digitalis Thapsilin, by O. A. Farwell and H. C. Hamilton.

A Sero-Enzyme Study of Bacterial Proteins; Bacteriological Findings in Ozena, by Herbert C. Ward.

Pruritis Ani, by Louis J. Hirschman, M. D., F. A. C. S., and Herbert C. Ward, M. S.

The Ophthalmic Test for Glanders: With a Simplified Method of Procedure, by N. S. Ferry.

Experimental Syphilis, by F. W. Baeslack, M. D.

Sanitation in the Trenches; Bathing Facilities and Habits of the Soldiers and Officers of the Army, by C. C. McCulloch, Jr., M. D.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for August, 1917.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	9	6	15
Intermittent Fever (Malarial Cachexia)	1	1	2
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough	3	1	4
Diphtheria and Croup		2	2
Influenza			
Cholera Nostras			
Pyemia and Septicemia	1		1
Tuberculosis	36	47	83
Cancer	23	11	34
Rheumatism and Gout	2		2
Diabetes	3	1	4
Alcoholism	1	1	2
Encephalitis and Meningitis	3	2	5
Locomotor Ataxia	4		4
Congestion, Hemorrhage and Softening of Brain	17	5	22
Paralysis	1	1	2
Convulsions of Infancy			
Other Diseases of Infancy	17	6	23
Tetanus	2	1	3
Other Nervous Diseases	1		1
Heart Diseases	51	46	97
Bronchitis	1	2	3
Pneumonia and Broncho-Pneumonia	5	7	12
Other Respiratory Diseases	2	2	4
Ulcer of Stomach		1	1
Other Diseases of the Stomach	2	2	4
Diarrhea, Dysentery and Enteritis	27	25	52
Hernia, Intestinal Obstruction	2	1	3
Cirrhosis of Liver	2	3	5
Other Diseases of the Liver	4		4
Simple Peritonitis			
Appendicitis	4	1	5
Bright's Disease	30	27	57
Other Genito-Urinary Diseases	14	9	23
Puerperal Diseases	3	4	7
Senile Debility	3	1	4
Suicide	3		3
Injuries	26	14	34
All Other Causes	33	10	43
TOTAL	330	240	570

Still-born Children—White, 16; colored, 25; total, 41.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1000 per Annum for Month—White, 14.35; colored, 28.23; total, 18.09. Non-residents excluded, 15.36.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean temospheric pressure 29.99
Mean temperature. 83
Total precipitation. 6.92 inches
Prevailing direction of wind, west.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITORS:

CHARLES CHASSAIGNAC, M. D.

ISADORE DYER, M. D.

COLLABORATORS:

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JOHN M. SWAN, M. D., Secty. American Soc. of Tropical Medicine..... } *Ex Officio*
L. R. DE BUYS, M. D., Secretary Louisiana State Medical Society..... } *Ex-Officio*.
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Vol. LXX

NOVEMBER, 1917

No. 5

EDITORIAL

THE PLAGUE AT NEW ORLEANS.

The splendid work of the U. S. Public Health Service is about to be concluded, so far as the plague in New Orleans is concerned. The last case of human plague was reported on September 8, 1915. Since then, New Orleans has been 80 per cent rat-proofed, and the work of making it 100 per cent goes on.

There are still rats at large, as the week ending September 22 showed 5,807 received at the laboratory of the Health Service, but no plague rat has been found since April 3, 1917. The total number of plague rats examined in the period of a little more than two years has been 353.

The remarkable thing about the campaign has been that, although there were some twenty-eight cases of plague in all, there has been no hysteria. There was no concealment; therefore prompt

and efficient segregation of the sick was possible, and there was no epidemic. The rest was intelligent and persistent enforcement of sanitary regulations governing the prevention of the disease.

The results are everywhere in évidence. New Orleans is cleaned and altogether healthier for the experience.

The continuous coöperation of the State and city health officials, the various business organizations and the large majority of the citizens themselves contributed no small part to the successful outcome.

It has been a magnificent example of efficient Federal administration of a problem which might otherwise have resulted differently.

CLEAN NEWSPAPER ADVERTISING.

So quietly has the State Board of Health operated the State law against improper advertising of fake medicines that the clean-up in the daily newspapers has not been sufficiently noticed.

Quite a while ago the New Orleans *Item* proposed and executed a wholesale reform. Now and then its intention has miscarried, but, on the whole, its pages have been clean.

Now the *Times-Picayune* has engaged to make its pages free of objectionable advertising, and it is a privilege to remark the absence of some of its old standbys.

The public still demands to be humbugged by patent medicines, but when the leading newspapers decline to publish advertisements which are misleading and so pretentious that they condemn themselves, reform must be on the way. The objectionable cure-alls and the obnoxious nostrums are no longer acceptable for advertising, and, with Federal and State legislation now protecting the public, the time may soon come when even the people themselves may learn that there must be a reason for this.

The newspapers have a various function in the home, and it is sane business to exclude from the pages of such that sort of advertising which in itself must cause question of the honesty of purpose in its other departments.

THE SOUTHERN MEDICAL ASSOCIATION.

In Memphis, November 12 to 15, will be held the eleventh annual meeting of the Southern Medical Association. This, which is the second largest medical organization of the United States,

had an attendance of over 1,800 at its meeting last year in Atlanta, and intends to surpass that number this year.

In addition to the usual line of papers and discussions, an interesting feature will be the meeting of the National Committee for the Eradication of Malaria, under the chairmanship of Dr. Rupert Blue, Surgeon General of the Public Health Service, which will form a part of the program of the Association.

Another feature of the meeting will consist of patriotic addresses by speakers of national reputation, and every effort will be made to shape the meeting into a patriotic convention.

We hope that all those of our physicians who can get off will make sure to visit Memphis, attend the meeting and help make it a great success, while profiting largely themselves.

DR. THOMAS SEILLES KENNEDY.

Dr. "Tom" Kennedy died on October 20 in New Orleans, his native city. He was one of our oldest practitioners and died in harness. The writer remembers him from the time that he was still called "Young Doctor Kennedy," because his father had been a well-known physician before him.

A practitioner interested especially in diseases of children, he was the pioneer in that line in the clinics of the Charity Hospital and taught that branch in the New Orleans Polyclinic for many years.

In addition, he was an educated gentleman, a student and lover of Shakespeare, whom he resembled to a sufficient extent to warrant the nickname of "Shakespeare," which had been given him by some of his intimates.

Of a gentle and jovial disposition, a man of ability and talent, he will be much missed.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

THE PRESENT STATUS OF INGUINAL HERNIAS.*

By E. DENEGRE MARTIN, M. D., F. A. C. S., New Orleans, La.

The evolution of surgery is interesting in all its branches, but in none more than that of hernia. Far be it from my purpose to attempt at this moment, and especially in the limited time allotted to me, to more than hint at the radical changes which scientific development has wrought in this particular field. My one desire is to impress upon you the undisputed fact that there can be no possible excuse in this age for any man wearing a truss. That such a prejudice existed against the operation prior to the open method of dealing with rupture is not astonishing, but it is deplorable that the truss-maker still thrives, with a mortality practically *nil*, and 95 per cent of cures reported.

Cutting operations, as well as the use of trusses, were employed in the earliest period of medicine. In the two decades from 1860 to 1880 we find many treatises on the subject by leading surgeons of that day, such as the suggestion of the injection of iodine, as practiced by Pancoast, the white-oak bark by Heaton-Gerdy's operation, with invagination of the sac, and the application of liq. ammonia to the surrounding tissues to produce inflammation and adhesions; the use of silver wire by Richardson, of New Orleans, and numerous others. Some of these operations were in vogue to a very recent date. The great objection to all of them was their inefficiency, as well as the risk attending them, and none contemplated more than the closing of the external ring. But in the decade from 1880 to 1890, when abdominal surgery was given such an impetus and it was no longer feared to open the abdominal cavity, a new era dawned for herniotomy, for free dissection of the structures involved became possible, and the repair of the distorted walls, as well as the high dissection of the sac and its extirpation and closure, could be practiced without fear of infection.

* Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18 and 19, 1917.

In 1889 these operations, which were devised for the closure of the external ring only, were substituted by what was known as the open method, which contemplated the repair of the abdominal wall. Nothing did more to popularize this method than the report of several hundred cases operated upon by Bassini, by his now well-known technic, first attempted in 1886, which, with some modifications of certain phases in isolated cases, has been universally adopted the world over. Bassini does not claim the sole credit of this method, but states that it is the culmination of important steps suggested by McEwen and others. It is not surprising that, up to this time, herniotomy was not popular with the layman. The surgeon had little to offer, besides the possibility of temporary relief, against the dangers of an anesthetic and the chance of infection. To the patient, the truss, with all its drawbacks and discomforts, held out an equally good chance, but none of these, at best were satisfactory, as shown by the hundreds put upon the market, the great majority adding to the distress of the wearer by compressing the cord, attenuating the muscles and enlarging the ring.

There were many cases which could not take chloroform, then so popular an anesthetic, and this difficulty was believed to have been overcome by the introduction, about this time (1890), of local analgesia with cocain. The toxicity of this drug was so great that the contra-indications for local operations were almost as great as those under general anesthetic. Since 1900, however, the herniotomies have increased rapidly. Not only is this to be attributed to the improved methods in vogue, but to the fact that no men who have hernias are being employed by manufacturing plants, railroads or the government, and are thereby barred from holding many good and important positions, as so many unscrupulous men had involved these corporations in heavy damage suits with claims of ruptures produced while in the pursuit of their duties. It is a well-established fact to-day that traumatic hernia is extremely rare, that the condition is found only in those in whom congenital defect exists, and is produced, not by a sudden strain or injury, but by continued intra-abdominal pressure, so weakening and dilating the internal ring that it may give way suddenly, producing what is apparently a traumatic hernia. You can well understand how common these suits were when it is remembered that statistics show that at least 12 per cent of all men suffer from some form

of hernia, and some state that in the aged it is as frequent as one in four; especially is this true of bubonocoele, or the hernia of weakness, so termed by the French.

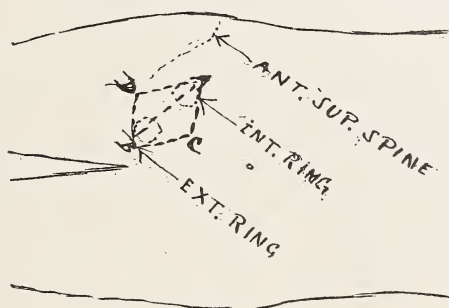
In 1905 the introduction of novocain by Einhorn removed the last obstacle to the operation. This wonderful drug has been a veritable boon to mankind. It is seven times less toxic than cocain, consequently can be used in larger doses and greater quantities, and never have I seen any reaction from its use. The employment of this drug, with the improved technic of infiltrating the tissues, has made me a convert to the local operation for hernia, and I shall now conclude by describing this technic as employed by all the members of our staff. We have used this method for the past two years, and in not a single instance within the past year have we had infection.

As the Bassini is ordinarily the operation of choice, I shall describe our technic for this operation; the injections, however, are the same for all others.

In order to better understand the procedure, we must first study the anatomy of the parts and the course of the several branches of nerves which supply the deep structures as well as the integument.

The inguinal canal is bounded by the internal oblique and the transversalis internally, Poupart's ligament externally, the external oblique and skin above, and contains the spermatic cord and sac when hernia exists. These tissues are supplied by the ilio-hypogastric, the ilio-inguinal and the genito-crural nerves. The hypogastric branch, with the iliac branch, pierces the internal oblique muscles immediately above the crest of the ilium and continues onward towards the internal oblique and transversalis muscles, and perforates the aponeurosis of the external oblique above the internal abdominal ring, and is distributed to the integument covering the hypogastric region. The ilio-inguinal perforates the transversalis near the forepart of the crest of the ilium and communicates with the ilio-hypogastric between that muscle and the internal oblique. It distributes filaments to it and the spermatic cord, also gives out filaments to the integument over the external ring. The genito-crural sends off the crural branch, which passes through the internal ring, descending along the back part of the spermatic cord. In order to analgesize these nerves, we begin by compressing the skin firmly between the thumb and finger at a point one and one-half inches to the inner side, and a little below the level of the

anterior superior spine of the ilium marked "A" on the diagram, with a sharp needle, inject a small quantity of the solution into the skin; also inject in the same way a second point marked "B," where the cord passes over the pubis. The needle of a large syringe containing at least half an ounce of the solution is again introduced at point "A," carried down until the external oblique is reached, which is recognized by the resistance to the needle. The muscle is pierced and infiltrated in the direction of the ilium in the tract of the nerves, using about one-half ounce of the solution. The next step is to inject the surrounding superficial structures, to prevent pain during the introduction of the final sutures. This is accomplished by injecting the cellular tissues along the lines formed by A, C, B and D, and, last, a deep injection is made at point B. Up to the present time we have used an average of one



and one-half ounces for each case, but we are gradually lessening the dose as the technic is being worked out; this is two and one-half ounces less than some text-books recommend. Our aim is to do the operation with as little solution as possible; we use a one-half per cent solution, with three to five drops of adrenalin to the ounce, or prepare it from the Farbwerke-Hoechst tablets.

Our operative technic is the same as in all Bassini's operations, and I will not, therefore, detain you with a description of these, except to stress the fact that all herniotomies, as well as all other operations, should be done by clean knife dissection, and not with finger and gauze. The object of this is obvious. By knife dissection every small vessel will bleed at once and can be caught and ligated, the tissues are not traumatized, and by operating with instruments, and not fingers, the patient is much less liable to infection. Some operators will tell you it does not matter—it does not to the operator, it is true—but follow your cases clearly and

compile your statistics at the end of the year. This will not only convince you of the error of your ways, but will prove a boon to your patients as well.

DISCUSSION ON THE PAPER OF DR. MARTIN.

Dr. W. P. Bradburn, New Orleans, in opening the discussion on this paper demonstrated by diagrams on the blackboard the method of local anesthesia employed by Dr. Martin.

Dr. Lucien H. Landry, New Orleans: In operating on a case of hernia, or any other condition, under local anesthesia, we make a contract with the patient not to cause pain; we should always keep this contract in mind and religiously try to carry out our end of the contract.

In this respect I wish to lay stress on one little point of the technic, which seemingly does not amount to much, but, in my estimation, goes a long way in winning the confidence of the patient. In the beginning of the injection, when you infiltrate the line of the proposed incision, pinch up a portion of skin and infiltrate it, and when you reintroduce your needle always do so in an infiltrated or edematized area. In other words, keep your edema ahead of your needle, otherwise the patient will feel every introduction of the needle, when he should feel only the first, and is liable to become demoralized.

The method described by Dr. Martin, I am not familiar with. We have been in the habit of blocking off the ilio-inguinal and ilio-hypogastric nerves on a line between the anterior superior spine and the umbilicus. The genital branch of the genito-crural nerve, when seen, is found at the lower inner angle of the wound.

The technic described by Dr. Martin claims to reduce the amount of solution employed; this is very desirable, as there is no doubt that a highly edematous field predisposes the patient to a possible infection.

Dr. A. B. Nelson, Shreveport: I cannot refrain from speaking on this subject, because I heartily agree with the doctor in regard to this method of dealing with hernia. It is the same method I have used for the last four or five years, and it has been entirely satisfactory in my hands. I have done one strangulated hernia by this method. The patient did not care to take a general anesthetic, because he had been operated on a number of times before, and he knew what ether anesthesia meant. He had a good dose of morphia to begin with. He was sore, and there was slight pain when I began to manipulate the sac, but I succeeded with it by injecting the neck of the sac. The solution was prepared as Dr. Martin has described, namely: one-half of one per cent novocain, with five minims of adrenalin chlorid to 50 c. c. of the solution. I have seen no toxic effect from it at all. In using local anesthesia you are able to do a more beautiful operation than you can where you operate under general anesthesia, because hemorrhage is less, due to the adrenalin chlorid, and your field of operation is much clearer. You can outline it and do a better operation.

Another thing I would like to mention in connection with this is the character of the hemorrhage when you come to close the wound. If you are not careful, and if you do not ligate all the bleeding points, the most minute bleeding points, you are liable to have a bad hematoma.

The vessels dilate again and you are liable to have a hemorrhage which will cause trouble.

Again, as the doctor mentioned, traction upon the cord will cause pain in spite of all you can do.

Dr. P. B. Salatch, New Orleans: I agree with what Dr. Martin has said, and this is the exact technic I have tried to carry out whenever I do a herniotomy under local anesthesia. It is more satisfactory than any other operation under local anesthesia. I tried it first by undertaking local anesthesia from A to B, as indicated by the diagrams, but I did not get results, for the reason that, if you do not limit yourself as in an appendectomy, you pull the structures to the side and you have got the conjoined tendon to suture. By getting around the angle there you block off all this territory and you can pull on and dissect away without pain. A sharp dissection is necessary in doing a herniotomy. If you pull, you cause some distress or pain to the patient. By doing a sharp dissection, according to Crile, you produce very little pain.

Another point: You cannot say to these patients that the operation can be done without pain, because, occasionally, you may have a bit of adhesion in the sac, and the painful part of a herniotomy, as in an appendectomy, is the peritoneum. By injecting around the neck you can dissect around the omentum without pain and ligate the peritoneum without causing pain.

Dr. D. I. Hirsch, Monroe: I give my patients one-quarter of a grain of morphin about one hour before I attempt operation. Just a few moments before the patient is put on the table I give him another one-quarter grain, which does away with a great deal of pain in making traction on the cord, and especially in handling the sac. In two cases I have had considerable oozing following the use of adrenalin, and I believe it is better to reinject these cases in closing the skin, rather than use adrenalin. I do not transplant the cord.

Dr. A. C. King, New Orleans: What about the after-pain in these cases after the novocain has worn off?

Dr. Herman B. Gessner, New Orleans: If I understand correctly the technic used by Dr. Martin, it is practically that given in the translation of Bruns' work on anesthesia. There is another way which I think is preferable, namely: the method devised by Cushing and Bloodgood, who were the pioneer American surgeons in this line, in 1899. Dr. Cushing and Dr. Bloodgood infiltrate the skin and fascia over the hernia site and cut down to the aponeurosis and external ring; then they infiltrate the aponeurosis and split open the roof of the inguinal canal. Traction is made with two artery forceps, one above and one below, showing the ilio-inguinal nerve running over the border of the conjoined tendon. Sometimes, in cutting off both these branches, you can take one per cent novocain solution and inject each of these trunks separately with about ten minims. That, as a rule, gives complete and lasting anesthesia, and it does not give that extensive and sloppy edematization of the entire wound. The genital branch of the genito-crural nerve you can identify satisfactorily, and it does not seem to make much difference if you infiltrate down to the canal and get all the nerves blocked off with one per cent solution, and in the great majority of cases you can complete the operation without pain. In the minority of cases you have to infiltrate a little about the internal ring or about the sac in separating it from the cord.

I was glad to hear what Dr. Nelson had to say about local anesthesia in the strangulated hernia cases. It is desirable to use local anesthesia for the other cases, and is imperative for the strangulated cases. These cases, if given a general anesthesia, will drown in their own vomit. It is a dangerous thing to give a general anesthetic to a patient with a strangulated hernia.

There is just one thing I want to add. In this year 1917 there should be a way in doing a hernia operation or in completing it, if you do it on the right side, to go fishing for the appendix. In over half of the cases you can fish for the cecum and appendix through a right inguinal incision for hernia and take out the appendix. In the minority of cases it is too much traction; it is hard on the patient and you have to give it up.

Dr. Martin (closing): The most pleasing thing in connection with these cases is that if we use local anesthesia the patients have little or no pain; but my paper was on inguinal hernia. We have been all over this ground, and what Dr. Gessner has said is true. We have been trying hard and have succeeded in getting rid of the condition to which he referred, namely: the sloppy tissue. We used four ounces of the solution at first, then three, and now we use one and a half, and we believe we can bring about anesthesia with one-half ounce. We have no edematization of the tissues. In the last seventeen cases we have had no infection. The tissues have been beautifully clean. We have tried all methods, but this is the result of our work. Every man has a method that he carries out, and if he knows that method thoroughly he had better stick to it.

What I have tried to do in this paper is to bring a message to the timid man and to the general practitioner. We know there are many thousands of men wearing trusses to-day who are afraid to take a general anesthetic and be operated on, and there is no excuse for this fear to-day, when these operations can be done safely under local anesthesia.

SYPHILIS OF THE THYROID.*

By J. A. STORCK, M. Ph., M. D., New Orleans.

Dr. William Osler has well said: "Know syphilis in all its manifestations and relations and all other things clinical shall be added unto you."

With our present-day serologic tests it has become easily possible to detect syphilis in its masked forms, but, even during the pre-Wassermann period, it had been my opportunity to observe, clinically, undoubted cases of syphilis with thyroiditis. Under intensive mercurial treatment, in conjunction with iodides, these cases showed what appeared to be a cure of the syphilis, and a subsidence of the enlarged thyroid.

* Read by title at the 38th Annual Meeting of the Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

During this period I saw a well-marked case of Mongoloid idiocy. This six-year-old female was the only child of a woman forty-five years old, and her father was an acknowledged and easily recognizable syphilitic. The child showed the stigmata of familial lues. Under prolonged thyroid treatment, little improvement was manifest, but, on using mercury rubs and iodides, improvement was rapid.

I have recently seen two cases of thyroiditis in which the Wassermann was negative, but in which the gland returned to its normal size under mercury and iodides.

However, my paper is not founded on these cases; they are merely mentioned incidentally. Nor will I risk the possibility of tiring you by quoting *in extenso* from the literature of the subject under consideration. I will use only such references as I may see fit to assist me in confirming my own deductions. At the outset I desire to especially acknowledge my indebtedness to the works of James Berry,¹ B. S. Lund, F. R. C. S., and Dr. Hubert Richardson² for references, the original of which are not at my disposal.

One of the most widely quoted authorities on syphilis of the thyroid is Eengel Reimers. He states that swelling of the thyroid gland occurs in more than half the cases in their early stages. In these cases the swelling was always soft and painless and caused no trouble.

Wolfler records a case where the thyroid was found to contain a gumma the size of a fist. Lockwood⁴ has drawn attention to the fact that slight and generally transient enlargement of the thyroid gland may be observed in the acute stages of syphilis, and James Berry⁵ confirms these observations of Lockwood.

Abrahams reports three cases of women who developed exophthalmic goitre—the first five months after the primary lesion, the second during the height of secondary infection, and the third two years after infection, all of whom were cured by anti-syphilitic treatment. Dr. Moritz Furst,⁶ of Hamburg, has published the case of a child who was born of syphilitic parents and who had at birth a goitre of considerable size.

Gummata of the thyroid gland have been described by Birch-Hirschfeld.⁷ Demme⁸ mentions three cases of congenital syphilis with gummatous nodules in the thyroid.

He has also observed symptoms of Basedow's disease to occur in syphilitics. Garnier studied the glands of five newly-born syphi-

litic children, and in only one case was the gland healthy. He says:

"The lesions were remarkable as being diametrically opposite to those found in the adult; the colloid substance, instead of being increased, was reduced or absent.

"The vesicles were uniformly full of cells, the capillaries dilated, and small hemorrhagic points were scattered through the gland, these being foci of cellular degeneration. These lesions are not confined to hereditary syphilis, but occur more or less marked in all cases of infection of the fetus."

These lesions are of importance, as they may account for many of the troubles occurring in the development of the gland. Lockwood¹⁰ remarks:

"The enlargement of the thyroid in this early stage of syphilis is comparable to the slight enlargement which is met with in early stages of measles and other acute specific diseases."

Lockwood further states "that, after he had learnt to look out for this thyroid enlargement, it was frequently noticed among his venereal cases."

I now come to a consideration of the cases on which my paper is founded. The cases which I desire to report are three in number.

Case 1. White male, æt. 46, a cotton factor, weight 135 pounds, consulted me in February, 1913, for pain in "the liver." History of chancre fifteen years previous to consulting me. The patient showed clinical evidence of syphilis. He had taken some mercury and iodid before consulting me. The Wassermann was positive. The thyroid gland showed no enlargement, nor was there any exophthalmos.

On February 12, 1913, six decigrams of salvarsan were given; seven days later the same amount was repeated. Two days after the second dose of salvarsan was administered a painless enlargement of the thyroid was noticeable, and on the fourth day the pulse, which previously had been 78, was now 94. The eyes were somewhat bulged; no tremor was visible. The patient presented a fairly good clinical picture of exophthalmic goitre. Mercury rubs daily and potassium iodid in ascending doses were begun on the eighth day after the second dose of salvarsan, and were continued for twenty days. By this time the thyroid gland subsided in its swelling, the eyes had resumed their normal state, and the pulse was down to 82. The urine, which on a previous examination had been normal, now showed a few finely granular casts, which is not uncommon during mercury administration.

A third dose of six decigrams of salvarsan was now given, and ten days later the Wassermann was negative. On my advice this patient has since used mercury rubs and potassium iodid.

A case recorded by Dr. Werman,¹¹ of Dresden, is of specific interest, as it is somewhat similar to the one just reported.

Case II. Male child, æt. 12, weight 65 pounds, was born of apparently

healthy parents, who denied syphilis. The Wassermann in the mother's instance was positive; in the instance of the father, negative. The child was brought to me for treatment of "loose bowels." Thyroid gland was much enlarged and somewhat soft and painless. He gave evidence of congenital syphilis—i. e., Hutchinson's teeth, etc., and had been treated for keratitis. No Wassermann was made in the beginning, but the child gave a frank Luetin reaction. The loose bowels were checked with coto bark. After eighty days' intensive treatment with mercury and iodid the thyroid gland had assumed its normal size. Wassermann and Luetin tests negative; the patient was generally improved. No salvarsan was administered in this case.

Case III. Unmarried white female, æt. 20, weight 96 pounds. Both parents had died young; one brother, apparently healthy.

The case showed an enlarged soft and painless thyroid (thyroiditis); no exophthalmos; pulse 73; no tremor, blood, hemoglobin 80, whites 8,000, reds 4,300,000. The patient had headaches and twitchings, was irritable and prematurely old. Wassermann negative; Luetin positive. Four decigrams of salvarsan were given, and repeated in seven days. This was all the arsenic this patient received, for an obvious reason. Thirty rubs with mercurial ointment were used, also potassium iodid in increasing doses until one hundred grains were taken three times daily. After an interval of fifteen days a second series of mercury rubs were given. Following this treatment the thyroid gland assumed its normal size.

In conclusion, I may summarize as follows:

1. That the thyroid is not infrequently involved in both early and late syphilis.
2. That, in my own experience, thyroiditis is the most common condition met with in syphilis, but, from the observation of others, gumma and other conditions occur.
3. That, while the thyroid is at times involved in the adult syphilitic, it is sometimes found in the young, but most often of all in infants.
4. That the thyroiditis occurring in syphilitics is favorably influenced by intensive anti-syphilitic treatment.

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THE IMPORTANCE OF REST UPON THE AFTER-RESULTS OF PELVIC INFECTIONS.*

By W. B. CHAMBERLIN, M. D., Baton Rouge, La.

In presenting this brief paper on a subject so common to all it is not my intention to go into a detailed account of the different infections of the pelvis, to present statistics, or offer references, but to bring to our attention in a rough way the changes that have taken place in the last few years in treating infections of the pelvic organs, and the results from this treatment.

Pelvic infection means injury, either slight or serious, to the pelvic organs. This condition, sooner or later, often leads to surgical interference. What to do and when to do it to secure the best results, both immediate and future, is the question.

Looking back ten or fifteen years, it is remarkable to note the entire change that has taken place in two surgical diseases or conditions—appendicitis and salpingitis—with their treatment.

The appendix, although known to be of no use, was considered a dangerous organ to interfere with, and every effort to cool down an attack would be made, with the result that general peritonitis, abscesses, fistulæ, obstruction and other complications were not a rare result. To-day how different—the quicker the better to have it out. People are educated to this fact, that delay is dangerous.

At the same time the effort to conserve the appendix and a field for further trouble was being made, how about that useful part of woman's anatomy known as the Fallopian tube? This tube, being of value both to woman and surgeon, it could not afford to wait to cool off, but was taken out at once. What results did we see? A higher rate of mortality and a better one of office visitors, months and years after, presenting all manner of abdominal and nervous symptoms and menstrual disorders. We all know this class too well.

That class of pus cases upon which vaginal drainage could be employed often did remarkably well, a certain percentage remaining cured and requiring no further interference.

Other cases, operated during the cold stage, did well, at the time of operation and following. These were probably those fortunate to be ill enough to be forced to stay at home and let nature rest them up and cool them off.

* Read by title at the 38th Annual Meeting of the Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

How many cases we see now with traces of old pelvic lesions, with the history of typhoid, malaria or continued fever following childbirth or a miscarriage. Needless to say we see also lesions from other causes. These cases give previous histories of pelvic trouble, sometimes of many years' standing, commencing with a lengthy period of temperature, followed by intervals of slight fever, then a disappearance of the symptoms, but feeling badly and unable to attend to their usual duties.

How different a picture this pelvis, or one properly treated and rested, presents to one during an acute or sub-acute attack, and how different, should there be no fatal result, the after-result will be.

The one will show, perhaps, adhesions in plenty, cysts and all else that goes with such a case, but these adhesions will be organized and dry, can be cut away and all raw surfaces covered up by peritoneum, leaving a smooth dry surface.

The other case, on the other hand, no dryness, but afterwards showing a moist and sticky pit, a nest for the future formation of adhesions for the patient, with a further prospect of more surgery.

People are not yet educated to the fact that all pelvic infections and diseases require proper rest. When they are willing to be guided entirely by the physician as to the period of rest at home, then will there be better results and less cases in the rest-wards in hospitals.

SOME FACTS ABOUT THE REPAIR AND TREATMENT OF FRACTURES.*

By ISIDORE COHN, M. D., New Orleans, La.

The questions involved in the title of this paper are as old as the practice of medicine, and yet to-day they are of more interest than they have ever been. No branch of surgery has so completely marked time until recent years as the subject of fractures. The repair of fractures has been of particular interest during the last few years, especially since MacEwen's epoch-making book, "The Growth of Bone," appeared in 1911. Since that time the controversy has been waged with great enthusiasm by experimenters and

* Read by title at the 38th Annual Meeting of the Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

clinicians. On previous occasions I have stated the views which I have formed as a result of three years' experimental work. No apology is necessary for repeating in part these views, because, as we look over the more recent American publications, we find that the question of repair is but lightly touched upon, and even then the old, artistic and rather picturesque ideas are given a dignified position, as though they were proven facts. It is a great relief to turn to some recent publications of English origin to find a rather extensive discussion of callus formation based on modern experimental data. It is rather hard for us to entirely forget the teachings of the past, and yet, apparently, we must.

Based on the old ideas of Ollier, the periosteum has been given the credit for much of the repair which takes place after a fracture. This would be eliminated if we would accept the proven facts that the periosteum is a fibro-elastic membrane which protects bone, gives an additional nutritional supply and acts as a natural splint after fracture. The periosteum does not contain osteoblasts; they lie on the surface of the bone and are easily activated by injury.

In the experimental work which was done in collaboration with Dr. Gustave Mann, we found that bony defects were repaired as well in the absence of periosteum as when it was retained.

A detailed discussion on callus formation cannot be undertaken at this time, but one may refer to a paper which I published in *Surgery, Gynecology and Obstetrics* on repair of fracture. An extensive discussion of this subject can be found in Grove's recently published work.

Before taking up the treatment of fractures we should first make a definite diagnosis. There are several obstacles to a correct diagnosis. The most important of these is the acceptance by the doctor of a patient's diagnosis of a sprain. Such a state of affairs should cease. Moreover, after examining the patient, one should hesitate to make a diagnosis of sprain until a fracture has been eliminated by all possible means. In order to do this we should cease to consider fractures as minor surgery, but rather as an important branch of surgery, the proper knowledge and application of which will redound more to the credit of the surgeon and comfort of the patient than in any other type of injury. A clearer conception of the importance of fractures is being thrust upon the medical profession by the public, through the agency of the Workmen's Compensation Act. The questions are being continually

asked, "How long will the patient be unable to return to work?" "How much will his earning capacity be permanently diminished as a result of the injury?"

Incidentally, these questions are being constantly answered erroneously, because no statistics are available in this country. The American Surgical Association is now trying to obtain statistics, such as have been obtained in some foreign countries, notably England and Australia.

The diagnosis of a fracture involves careful attention to detail; particular attention should be directed to obtaining exact information regarding the accident, the location of the pain, the measurements, limitations of motion generally spoken of under the heading of loss of function, and X-ray findings.

A word here about the interpretation of X-ray findings may not be out of place. We should not mistake epiphyseal lines for fractures, and, further, we must not depend on a radiogram taken in *one* plane. Such a picture would often mislead us, because an apparently good apposition in one plane may show overriding, lateral or rotary displacement in another plane. From personal observation I feel sure that there is certain diagnostic evidence, the importance of which is often overlooked, such as persistent localized pain and loss of certain motions, to say nothing of our failure to use a tape-measure.

Persistent localized pain is one of the best evidences of fracture which we have. The loss of certain motions about a joint following an injury is often diagnostic in itself, if we would take the trouble to remember the location of muscle attachment. I might remind you that such measurements as are based on the relationship of certain anatomic landmarks are of more than academic value.

Having determined on the evidence of a fracture, certain procedures, it seems to me, are imperative, if we would obtain good results, anatomic and functional, namely:

I. Anesthesia. II. Immediate reduction. III. Immobilization. IV. After-care.

Separate discussions of each of these is necessary. Fractures must no longer be considered work to be done by the untrained man. Fractures must not be considered a "one-man's job." To apply two padded boards to the forearm, without attempting to

reduce a deformity, is worse than useless, and to attempt reduction without anesthesia is not humane nor is it good surgery. It is not humane, because manipulation of a fractured extremity causes pain, and pain causes further muscle contraction, thereby increasing the amount of force which would be necessary to break up an impaction and reduce a deformity. An anesthetic removes the psychic element and it relaxes the muscles, thereby making reduction a relatively easy matter. This last statement needs some amplification.

Attempts at reduction which are not along anatomic lines are not going to reduce the deformity, and, as a result of their inability to reduce the deformity, some men hurry to accept the dictum of Mr. Lane: Such a procedure is dangerous. *If one will individualize fractures, making traction in a direction calculated to oppose the muscles producing the deformity, he will be gratified with a non-operative plan of treatment in most fractures.*

Reduction under anesthesia should be resorted to at the earliest possible time after the fracture, if one wishes to obtain an accurate approximation of the fragments. The idea of waiting for the swelling to subside before reduction is attempted should be relegated to the historic past, for the reason that, immediately after the accidents, the callus-forming elements are most active, and because muscle contractions, which in the beginning are merely spasmodic, later amount to real contractures, which require greater force to overcome. Moreover, the ends of the bone may become covered by a new connective tissue membrane, which in itself may produce delayed union.

Another fallacious idea in regard to reduction, it would seem, should be disregarded; it is in regard to aged individuals who have fractures. Those who have extensive experience with fractures have seen patients 75 years old and over recover perfect function after proper treatment. No one should be condemned to living invalidism because of his age. Few more progressive steps in this direction have been made than that of Royal Whitman when he advised abduction treatment of fractures of the femur in the aged.

Having reduced the deformity, it becomes necessary to consider the method of treatment best adapted to the particular case. The fact that there are several systems of fracture-treatment in use to-day is evidence that the oldest methods have not given satisfaction. I need not dwell on this point, as all of us have witnessed

an aged woman with a fractured femur put to bed with sand-bags, a Liston splint or some other equally ineffective method of treatment; all of us have seen the unsightly deformity of the elbow following a fracture above the condyles treated by a straight splint or cast; all have seen the broad ankle, the painful flat foot and diminished earning capacity of the individual who has had a Pott's fracture treated by a straight plaster cast, the foot at right angles to the body; all have seen the deformity following a fracture of the shaft of the humerus treated by the old internal and external right-angle splint. No one can forget the case of Volkmann's ischemia, the ankylosis of joints, the atrophy of muscles and consequent helplessness of the individual who has had a fracture which has been immobilized for a period of weeks, during which time the dressing has not been removed, the part, consequently, has not been inspected.

Nothing is worse than prolonged immobilization. As an outgrowth of the dissatisfaction over the results obtained from the "prehistoric" prolonged mobilization came Championniere's method of mobilization and massage. This method has not received its proper share of attention at the hands of the general profession because of a lack of appreciation of the details of the method and a misunderstanding of the originator's conception of the word massage. Many of the most ardent enthusiasts failed, even after a prolonged study of Championniere's methods, to obtain good results by mobilization and massage.

In this, as in other so-called systems, attention to details is essential. Mobilization does not mean dispensing with splints, nor does massage mean the rough handling of muscles which the average masseur is inclined to use when you refer a case to him for after-care.

Mennel, a follower of Championniere in England, found that his results were exceedingly good during the first few weeks, but later limitation of motion developed. Not understanding the reason of his failure, he wrote to Prof. Championniere, who replied that the patients had been given an overdose of mobilization and massage. There are certain facts which must be understood:

1. Prolonged immobilization means atrophy and contraction. (Groves.)

2. It is our first duty to secure accurate anatomical form, and our second to maintain *proper* healthy muscular nutrition and exercise. (Groves.)

3. Excessive motion following fracture, particularly in the neighborhood of a joint, favors an excessive callus formation, which will lead to an ankylosis, bony in character; therefore an attempt to improperly apply this method with a view of favoring nutrition of muscles, thus preventing contractures, will result in bony ankylosis. How can this difficulty be overcome? By a careful appreciation of the ideas of the originator. By massage, *Championniere* means a light, stroking, rhythmic motion, always in one direction, and that from the distal to the proximal end. This has been compared by Mennel to the gentleness of a caress. The mobilization which he speaks of is not a forced one; not one which causes pain; not a repeated motion, but a single painless motion. It must be understood *that any motion of an injured joint which causes pain is injurious*. No more illuminating discussion of this subject has appeared than that by Robert Jones ("Injuries to Joints").

No single method of treatment of fractures is universally applicable. A knowledge of each is necessary, and a combination of the good points in each is essential at times, in order to obtain good results. Many adherents to the old method of prolonged immobilization who had been disappointed in their results turned their ear readily to Mr. Lane's operative suggestions. The time is too short to discuss this subject fully, but there is time to say a few words. For success in routine operative work in fractures, one must be especially qualified, both by environment and technical skill. Sepsis is fatal to success in operative work in fractures, whether it be after the use of foreign material or auto-transplants. If this last statement is true—and it is—then, operating on recent compound fractures is bad practice. This has been the experience of English and French army surgeons, so far as I have been able to read. Drainage in compound fractures, particularly gunshot wounds, is the most important early treatment. Because of this fact, the various applications of the extension methods of Bardenhauer have become popular during the present war. It has been necessary to make use of some form of immobilization which would permit of frequent changes of dressings and irrigation, such not being possible with plaster casts, and certainly not in operative cases. The extension treatment is misunderstood, and often times abused, because of our failure to remember certain facts. The commonest application in general use is the Buck extension. This

fails often because of the use by the surgeon of insufficient weight, and because of friction (the surgeon allowing the leg and thigh to remain on the soft bed). Groves well defines the basic principle of the extension method in the statement, "The principle of the method is that of the establishment of an equilibrium of forces." For this reason considerable extending force must be used. One may confidently look to the day when the Jones modification of the Thomas splint, the Hodgen splint, the Groves splint and the splint of the type of the aeroplane splint will be in more general use.

SUMMARY.

1. The old conception of callus formation should be discarded.
2. A more exact knowledge of muscle attachment and action should be possessed by the fracture surgeon.
3. Prolonged immobilization should be discarded.
4. Frequent inspection of the part, contrast baths and the proper use of massage should be substituted for prolonged immobilization.
5. Board splints should be discarded for plaster splints wherever possible.
6. Extension methods should be given careful consideration, particularly the more recent developments of the method.
7. Operative treatment is a special field for special cases, and to be used only in the most thoroughly equipped institutions.

GASTRIC CRISES OF TABES.*

By A. L. LEVIN, M. D., New Orleans, La.

The object of this paper is not to outline a broader view of the subject under consideration, but to call the attention of the medical profession to certain phenomena of gastric disturbances, such as epigastric pain and vomiting, the underlying true cause of which gastric crises is very often overlooked, in spite of the fact that, of the various kinds of crises in tabes, the gastric are the most common. While touching the point of diagnostic errors, I dare to remark that there is a crying need for greater accuracy in gastric diagnosis, a much-neglected branch of our medical schools. F.

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Epplen (*Northwest Med.*, July, 1914) deplores the existing state of affairs and advises physicians to get away from text-book teachings, to avoid the uncertain diagnosis of dyspepsia and to apply with caution the ordinary means of gastric diagnosis. It is indeed tempting to diagnose peptic ulcer when severe epigastric pain and vomiting are the outstanding features in a given case. Of one thousand cases of tabes dorsalis in the Cook County Hospital, carefully studied by John W. Nuzum (*Jour. Am. Med. Assn.*, February 12, 1916) 8.7 per cent have been subjected to laparotomy under mistaken diagnosis, one or more times. Gastric ulcer was the diagnosis most frequently made, with gall-bladder disease next, and appendicitis a close third. It is interesting to note further in that report regarding operations for post-operative adhesions. There were seven on five patients. One patient had five laparotomies, the last three for post-operative adhesions, and following each operation the old symptoms of epigastric pain, with severe vomiting, returned—that is, gastric crises of tabes. I also wish to call your attention to the purely motor gastric crises, where recurring vomiting spells, without pain, constitute the most important item in the history of given cases. Such cases are often mistaken for acute indigestion and the diet is made the scapegoat, or a diagnosis of nervous vomiting may be entertained. Mistaken diagnoses occur chiefly through failure to examine the nervous system. This point I wish to emphasize strongly. The subject will be made clearer, the differential diagnosis easier and appropriate treatment will be better applied if a brief review of the subject is tolerated.

Gastric crises, one of the many phenomena of tabes, has no pathology of its own, but is produced by the pathological condition of the spinal cord. What factor causes the degeneration was a matter of dispute until the Wassermann test came to the rescue and spirochætæ found in the spinal cord. Duchenne alluded to the frequency of syphilis. Leyden pointed to chill as the cause. Wunderlich laid stress on overexertion, fatigue, sexual excess and probably concussion of the spine. Erb was the man who laid the strongest emphasis on syphilis as the real factor in tabes. This view was strongly supported by the famous French syphilologist, Fournier. Möbius expressed his conviction in the following words: "Without syphilis there is no tabes." The latest statistical studies seem to confirm the guilt of syphilis in tabes. Noguchi found the spirochætæ in the cord in one case out of twelve.

According to McCallum, the lower sensory neurons of the posterior columns in the cord are affected. The lipid myeline sheaths and the axis-cylinders of the nerve fibers disappear and are replaced by an overgrowth of neuroglia. F. R. Starkey is of the opinion that the many mysterious phenomena of tabes which could not be accounted for solely by degeneration of the posterior columns of the cord are probably due to the involvement of the sympathetic nervous system and glands of internal secretions. According to Nagotte, there is a meningitic process about the posterior roots, close to their point of entrance into the spinal cord. This idea of a meningitis is very well borne out by the findings in the spinal fluid, namely: increased cell and globulin content. The root fibers are involved in the chronic inflammatory process, and secondary degeneration is the result. Through these degenerated tracts probably pass fibers of sensation, touch and reflex function. The sensory fibers of pain may be pinched at the point where they enter the cord. It is then evident that the gastric pain in gastric crisis is not necessarily due to an organic lesion in the stomach, but to a distant factor, and the vomiting is due to a central nervous disturbance.

Gastric crises of tabes is quite common, and usually not diagnosed. When a history is obtained of severe epigastric pain waking up the victim in the hours of the night, after a period of apparent well-being, and he cannot blame the diet as a cause of the trouble, shortly to be followed by nausea and vomiting, at first food, if it happens to be shortly after supper, later on clear fluid or mixed with bile. The agony lasts a few hours and then wears itself out and the patient falls asleep. This may be repeated the following day, or only a sensation of nausea may be experienced, at times fairly well in the daytime, to be reawakened the following night or nights, until the fire is out by itself or extinguished by a little medication. A period of rest may then ensue for weeks or months, when the spinal storm breaks out again. According to the duration of the disease, the storm may be mild or severe in character. Such victims usually wander from one office or clinic to the other in search of relief. As a rule, there is no history of vomiting blood unless the vomiting is severe and prolonged; loss in weight, in spite of the severe repeated punishment, is not an important item in their histories. The history is usually of long duration—many months or years. Stomach contents analysis may

be high, normal, low or achylia; occult blood negative, urine may be normal, blood for Wassermann positive or repeatedly negative, physical examination of heart, lungs, liver, spleen and abdomen negative, but the examination of the nervous system and spinal fluid are very important. If you find a positive Romberg sign, absent knee-jerks, Argyll-Robertson pupil or sluggish reaction to light and an increased cell and globulin content in the spinal fluid, even with a negative blood for Wassermann, the diagnosis is sealed. I may go a little further: With a history as described and loss of knee-jerks, Argyll-Robertson pupil, you are fully justified in strongly suspecting gastric crises of tabes.

Prognosis: In the early stage of the disease the progress may be stopped by the proper modern treatment. After it has well developed, a cure is impossible; the patient may be made comfortable and his condition somewhat improved. The duration of the disease may cover a period of many years, and death is rarely due to "crises."

Treatment: During an attack, usual measures to quiet the storm of the nervous system must be resorted to; after it is over, the only treatment that will benefit the patient is a persistent anti-luetic, by intravenous, intraspinal, or both, administration of salvarsan or neosalvarsan and mercury and iodid in addition. The mode of administration varies greatly, in the experience of many writers. In my case, which I will describe, I used salvarsan intravenously and mercury and iodid. The intraspinal medication is not suitable for clinical cases. The following cases came under my observation in my gastro-intestinal service:

Case 1. J. K. (April 10, 1917), male, white, 47, candy-maker. Gives history that in 1911 had a fall. Since then sharp shooting pains in various parts of body, worse at night. Last year epigastric pain and vomiting often; vomits large quantities of fluid, no blood. No loss in weight; appetite good; bowels costive. Primary lesion in 1901. Physical examination negative, except for loss of tendon reflexes; a positive Romberg; gastric analysis, urine and stool negative. Spinal fluid positive. Blood examined at Charity Hospital, Presbyterian and Touro, with negative results. Three full doses of salvarsan intravenously, supplemented by mercury and iodid. Very marked improvement. All symptoms under perfect control, so far.

Case 2. C. H., white laborer. Very severe abdominal pains in the morning for the last eight or nine months; no relation to food. Profuse vomiting. Sensation of a band constricting around waist line. Profuse perspiration as soon as he goes to sleep; general *málaise*; some loss in weight, and extremely nervous. Nauseated often. No alcohol; heavy smoker. Negative venereal history. He also complained that very often

he feels like he is going to lose his right mind; suffers from lightning pains and has a peculiar sensation in rectum. Heart and lungs negative; abdomen nothing of special interest; liver and spleen not palpable; eyes, right, oval in shape and larger than left, do not react to light; Romberg sign present; tendon reflexes lost. Gastric analysis: Quantity, 75 c. c.; HCL, 74; total acidity, 110; chym., good; mucus, normal; urine, negative, except for indican, two plus. X-ray: Considerable irritability of stomach. Wassermann test: Tch. and orig., strongly positive. Spinal fluid: Increased cell and globulin count. Anti-luetic treatment instituted; three full doses of salvarsan intravenously and mercury and iodid in addition. Patient is greatly improved; most of the symptoms are under control, although his Wassermann, on April 25, 1917, was still three plus positive. This is a far-advanced case. It is advisable to give him more salvarsan.

Case 3. H. F., colored, 47, bartender. Came under my observation in August, 1913. History of attacks of vomiting at night, preceded by burning sensation in epigastrium and pain in upper abdomen. Attack may last a few days or at times a couple of weeks, to be followed by a period of perfect rest for several months, then the story repeats itself. During a spell he is nauseated most of the time; insignificant loss in weight. Bowels irregular. History of primary infection twenty years ago. His examination is practically negative, except for a positive Romberg; sluggish pupils and loss of knee reflexes. Gastric analysis: Low acidity. Urine negative. Wassermann negative. He is doing remarkably well under anti-luetic treatment.

Case 4. W. E. (November 10, 1916), white, 29, wine-cellar work. For many years stomach trouble. Pain in epigastrium, lancinating in character. He is suddenly awakened at night, about 2 or 3 a. m., with severe epigastric pain, nausea, and followed by vomiting food, water and mucus; he experiences also a burning sensation in epigastrium. Lost forty pounds in a year and a half. Primary lesion ten years ago. Wassermann twice negative. Occult blood negative. Physical examination negative. Gastric analysis: Quantity, 95 c. c.; HCL, 52; chym. and mucus, normal. X-ray: Probably luetic stomach, spasm of pylorus and contractions through entire stomach; marked retention. Examination of nervous system: Sluggish reaction of pupils to light, loss of tendon reflexes, Romberg present and spinal fluid positive. Diagnosis confirmed by neurological clinic. This patient refused salvarsan. He received heroic doses of iodid and mercury. As soon as he is relieved he disappears, to return when storm recurs. Have not seen him since January, 1917.

In conclusion I wish to admit that if several years ago a reminder of this sort would have come across my path I would have been able to report to-night many more cases of "gastric crises of tabes."

FIRST CASE OF LEISHMANIOSIS CUTANEA IN VENEZUELA.*

By JUAN ITURBE, M. D., Caracas, Venezuela.

Credit must be accorded to Lindenberg¹ of having identified the *Bauru ulcer* of the State of Sao-Paulo, Brazil, with the Biskra button. In substance, the cause of those tegumentary ulcerations is a protozoon of circular or oval shape, of two to four microns in length and one to two in width, classified by Vianna² under the denomination of *L. braziliensis*, the specific agent of the leishmaniosis cutanea, a disease known in some parts of Venezuela by the vulgar name of festering wound. The *L. Braziliensis* in preparations colored with Giemsa's stain present an oval-shaped nucleus of violet tint situated near the anterior extremity; its protoplasm is but slightly affected by the coloring matter and is somewhat blueish.

The kinetonucleus or blepharoblast is located exactly in the line of the lesser diameter of the protozoon. The fundamental character of the leishmania is the presence in the interior of the protoplasm of a stained band of pale red, situated perpendicularly to the kinetonucleus and which is called *rizoplasto*.

The disease has been described in other States of Brazil by Carini,³ Pirajá da Silva⁴ and Matta;⁵ in Surinam by Flu;⁶ in Perú by Escomel⁷ and Gastiaturú;⁸ in Paraguay by Migone;⁹ in Bolivia by Sagarnaga;¹⁰ in Panamá by Darling,¹¹ and in French Guiana by Nattan-Larrier and Heckenrath¹².

The patient, subject of the present discussion, as well as the related microscopic preparations, were submitted to the National Academy of Medicine and studied in our laboratory by Drs. Gorgas, Guiteras and Carter, members of the Yellow Fever Commission of the Rockefeller Institute, who confirmed our diagnosis.

X. X. arrived at our clinic from San Fernando de Apure, where he resides and is engaged in the cattle industry. He is a peasant cattleman of our friend C. E.

He states that two years previously he suffered in both legs various pruriginous acne, hard, violet-colored, resisting all medication. These tumors increased in extent until they ulcerated. Some of them healed spontaneously, while others remained in the same state; the ulceration was characterized by hard edges, a cover of black crust, and bad odor. In the month of August of last year he decided to consult us, having

*Paper read at the Second Venezuelan Congress of Medicine, assembled at Maracaibo, 1917.

had no improvement from any of the treatments to which he had been submitted.

As may be seen in the photoplate which accompanies this note, the lesions of the skin are localized in both legs. In the right forearm and the knee of the same side movable nodules may be readily observed situated in the subdermic region. During the course of his illness, X. X. does not remember to have suffered from fever.

The examination of the blood gave the following result:

Red corpuscles.	4,800,000
White corpuscles.	10,000
Hemoglobin.	73,000

Leucocital formula:

Polynuclear eosinophiles.	11 %
Polynuclear basophiles.	33.5%
Mononuclear.	2.9%
Large lymphocytes.	18 %
Small lymphocytes.	32 %
Transitional forms.	2 %

The Wassermann reaction was — — —. The preparations affected with serosity and the blood of the lesion, previously scraped, colored with Giemsa's stain, showed the presence of a great quantity of *L. braziliensis*.

This case was submitted to the emetic treatment, following the methods of Vianna,¹³ Carini¹⁴ and Utra Silva.¹⁵ One month after treatment the cure was definite.

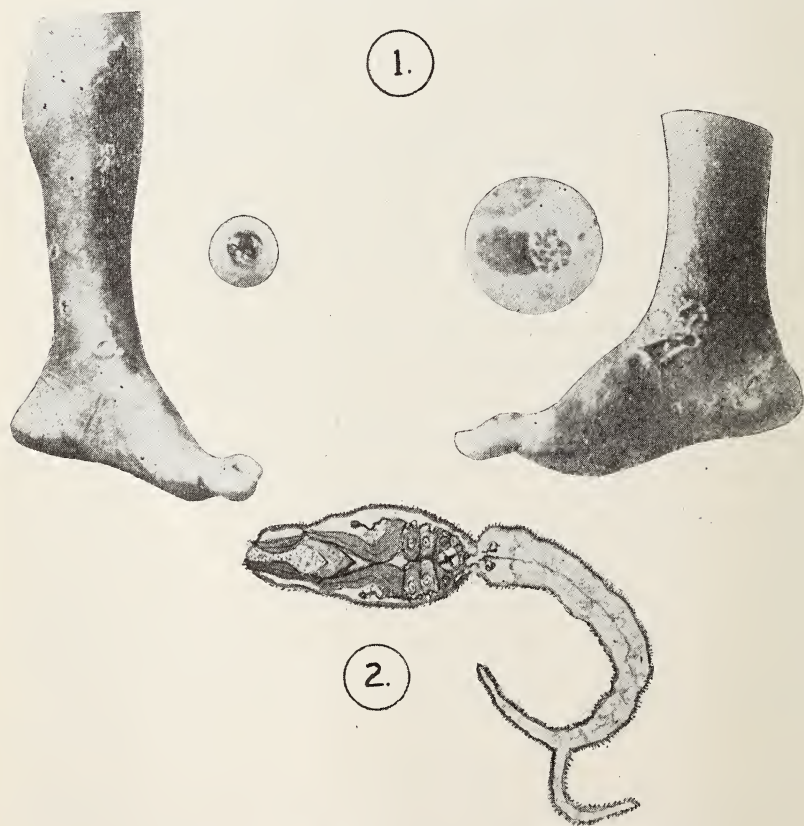
We employed the emetic of Bais Bros. in an aqueous solution of one per cent. Sterilization is done by filtering cold through a Berkefeld filter. Every two days there will be intravenous injections of 5 c. c. of the solution referred to until cure is complete. Care should be taken to inject the liquid as slowly as possible, in order to avoid the fits of coughing and muscular pains which are apt to result when the emetic solution is introduced rapidly into the vein.

Lindenberg¹⁶ has employed also in this disease erixidine (oleaginous emulsion of trioxide of antimony), a substance recommended by Kolle¹⁷ for the treatment of trypanosomiasis. This has given excellent results.

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1. First case of Leishmaniosis cutánea in Venezuela.
 2. Adult cercaria of *Schistosomum mansoni*.

THE ANATOMY OF THE CERCARIA OF THE SCHISTOSOMUM MANSONI.*

By JUAN ITURBE, M. D., Caracas, Venezuela.

The organism of the adult cercaria of the *Schistosomum mansoni* presents some difficulties on examination, for the following reasons: The rapid movements of the tail, the transparency of the body and its slight sensibility for colored matter.

By the following simple procedure I obtained some excellent specimens: A drop of material, extracted for examination, was placed in a perfectly clean and portable object; this was then placed in a chamber for a period of two hours, until all the essential parts of the cercaria were colored with the suspended material contained in the drop of material. In case these particles do not uniformly combine, thus making it impossible to define the details, then it is expedient to illuminate the visual field either with lactophenol or potassium acetate.

As I have recently demonstrated at a meeting of the Academy of Medicine,¹ fifty or sixty days after the miracidium has penetrated the body of the specimen host the cercaria presents the following characteristics: a strong tail, bifurcated throughout its distal third; the oral sucker is larger than the acetabulum; the body is covered with minute thorns and filled up with three pairs of glands of a mono-cell formation. The germinal cells occupy a space between the ventral orifice and the head of the tail. The glandular cells are at first round—*i. e.*, when the cercaria has not as yet attained the adult stage, but when fully developed the cells become more oblong and on both sides connect with the extremity of the body. Very often they develop the acetabulum altogether; generally the last part covers the anterior region of the ventral orifice. The glandular ducts are found along the external border of the secretive system and extend to the anterior part of the body of the cercaria near the oral orifice. Each meatus is limited with four thorns, which are only visible when strongly magnified.

The cercaria does not show any vestige of possessing an alimentary tube, but at the bottom of the oral sucker a cavity may be observed, ending as a blind sack, which, as long as the animal has not as yet attained the adult stage, is filled with a granular and refracting substance. With the adult cercaria this matter is more homogeneous.

* Academy of Medicine, Ordinary Session No. 424.

The excretory system is characterized by five pair of flame cells, situated between the germinal epithelium and the head of the tail. The head of the cercaria is encircled by from six to ten points, which are for the purpose of the traverse skin penetration of the animal host. The measurements are as follows:

Body:

Length 0,100 m. m. to 1,130 m. m.

Breadth 0,040 m. m. to 0,050 m. m.

Tail:

Length. 0,140 m. m. to 0,150 m. m.

Breadth 0,020 m. m. to 0,025 m. m.

Bifurcating rami:

Length 0,040 m. m. to 0.050 m. m.

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INFLUENZA.*

By A. J. REYNOLDS, M. D., Fort Necessity, La.

In an article on the "Bacteriology of Epidemic Grip" C. H. Nammack, of Bellevue Hospital, New York, deals with findings obtained by making cultures of the nasal secretion and sputum of patients during the epidemic in New York in the winter of 1915-16. The following note concerning the three main factors on which this epidemic depended is well worth repeating:

"First, the tremendous variation in climatic conditions which has occurred in the past two months; second, the crowding together of great masses of people in badly-ventilated cars, subways and moving-picture and other halls; and, third, the contamination of the air, which we have been obliged to breathe, by the coughing, sneezing and spitting of those already suffering from some form of respiratory infection, usually of the common-cold type. The abrupt transitions which occur in going from crowded, over-heated indoors to the chill outside air result in an alternating hyperemia and congestion of the mucous membranes of the respiratory passages, with a subsequent constriction of the blood vessels, which produces a condition of affairs that is very favorable for the reception and subsequent vigorous growth of the infecting organisms, and which may result in the development of the characteristic clinical picture and symptoms of grip."

A careful description of the methods of obtaining material, cultural methods and experiments is given. The number of cases

* Read before the Franklin Parish Medical Society, May 15, 1917.

studied in the epidemic were about fifty, and, from nineteen, influenza-like bacilli were isolated, but sometimes in so small number as to be considered not of etiologic importance. The influenza bacillus was found alone in six cases and associated with other organisms in thirteen cases. The pneumococcus was isolated from eighteen cases. Other organisms found were the hemolytic streptococcus in six, Friedlander's bacillus in three, staphylococcus in three, and micrococcus catarrhalis in only one.

Special attention is directed to the fact that, even after the severe symptoms have subsided, the patient who has suffered from an attack of influenza may remain a source of danger to the community, not so serious, perhaps, as a typhoid carrier, but none the less requiring such local treatment as will result in the destruction of the residual infection. Instances are cited to illustrate the importance of this precaution.

C. P. Showalter, writing on the cause and treatment of influenza, says clinical cases of the disease commonly called la grippe are frequently due to organisms other than the Pfeiffer bacillus, and he incriminates the pneumococcus and streptococci. In many cases the infection with the Pfeiffer bacillus is secondary to infection with one or both of the other (*West Virginia Med. Jour.*, March, 1916).

He believes that influenza should be given more serious attention by the medical profession, especially the complications. Vaccin therapy, he thinks, should not be used indiscriminately, but reserved for properly selected cases, such as middle-ear complications and infections of the nasal accessory sinuses. He emphasizes the importance of fresh air, plenty of water and very light diet. The drug treatment, he states, is largely symptomatic. He gives aspirin, the salicylates, and sometimes the coal tar preparations, such as acetanalid, antipyrin and phenacetin; he warns that the last-mentioned drugs must be given carefully, on account of their depressing influence on the cardiac apparatus.

To any one who has taken care of many cases of influenza, says Dr. B. R. Robinson (*New York Med. Jour.*, February 12, 1916), anything in the way of an efficient and harmless remedy should be welcomed gratefully. In the following prescription he believes such a remedy exists:

Ammonii salicylatisgr. 3

Caffeinae.gr. $\frac{1}{4}$

Put up in one capsule.

Two of these capsules taken by an adult every two hours for four or five doses, and then every three or four hours.

A mouth wash or gargle of liquor alkalinus antisepticus well diluted with water may be used three or four times in twenty-four hours.

Robinson says:

"It is really remarkable the beneficial effects often produced by taking these capsules. I cannot commend their use too strongly. I am convinced that up to date they are the most useful remedy I have tried in the treatment of grippe. Hitherto, in epidemics of grippe, I have prescribed two-grain quinin pills, four times in twenty-four hours, as a preventive remedy. Whenever the salicylate capsules are taken only four times in twenty-four hours during an attack I think it advisable to prescribe two grains of quinin at each meal as a tonic.

"I have never tried the ammonium salicylate capsules as a preventive measure against attacks of grippe, but am disposed now to do so, as I believe they might be useful. Ammonium salicylate is more stimulating and less nauseating than the sodium salt. The caffeine is a heart tonic and antineuralgic. All the salicylates have a pronounced antimicrobial action. This is shown most notably in the treatment of rheumatic fever."

In summing up his article Robinson says that, of course, in the use of the capsules, brains must be used and the personal equation of the patient duly considered. Larger doses, continued frequently for a longer time than here stated, might perhaps be advantageously employed with many patients. On the other hand, better results are often obtained by drugs in relatively small doses and not given too frequently after the patient is well under their influence. He finds that a grippal condition will not infrequently hold a patient for two, three or more weeks, and that such individuals may notably improve during a few days and then have a relapse, which relapse is more or less serious according to different conditions, some of which are still problematical as to their effects. Therefore, he thinks it wise not to overdo the matter of drugging in quantity or frequency at any one time, but to allow wisely for the uncertainties and duration of the disease.

A FEW REMARKS ON IMBECILITY, AND A SUGGESTION AIMED AT PREVENTION.

By H. L. FOUGEROUSSE, M. D.,
Louisiana Hospital for Insane, Pineville, La.

The attitude of this fickle world towards the delinquent has changed with the ages. In the time of the ancients they were put to death to preserve the integrity of the race. During the Middle Ages, as fools and jesters, their liberty was unrestrained and they were regarded with superstitious reverence and fear. Ever misunderstood, and appearing as shadows in the brightest spots of civilization, the pendulum again swung backward, and during the days of the Reformatory we find them denounced as "possessed of the devil." Modern views are in keeping with psychologic and physiologic research.

In a legal sense, imbecility may be defined as "the state of mental defect existing from birth or from an early age, due to incomplete cerebral development, in consequence of which the person affected is unable to perform his duties as a member of society." By scientific methods and tests the imbecile has been graded and classified according to mental development.

Except as a caretaker, the public is little concerned with low-grade imbeciles. The medium and higher-grade imbeciles are encountered in every walk of life. Many have worn the royal purple, and even now, in spite of the modern practice of segregating and circumscribing the liberty of these people, the higher type moron is occasionally found administering the affairs of State or directing the managerial end of some governmental department. This, of course, is all wrong, and possibly is a creature of our present political-spoils system. When it is taken into consideration that a large part of our lunatic population were constitutionally inferior prior to the development of psychoses, that 50 per cent of all criminals are imbeciles, and no one has denied that a majority of all murders are committed by imbeciles, and the unrestrained females of this class burden the world with their offspring of epileptics, lunatics and what-not, it is not difficult to determine, in a remote way, the stupendous part played by these deficient people in bringing about the necessity for large and expensively conducted institutions styled "hospitals for insane."

Since we have the mental defectives with us, it may be said in

their behalf that, in a limited sphere, they can be made useful. I have often thought it a wise provision on the part of nature for so many imbeciles to gravitate to the State hospitals for the insane. There is much work to be done about such institutions that is both unpleasant and repulsive, and the imbeciles, with their blunted senses, fit in, and, under proper supervision, accomplish these tasks very well. They also take readily to outdoor occupation. Field-work is compatible and apparently enjoyed by them. They are useful about the kitchen, bake shop, sewing room, piggery and the barns. Many of the better class are here used as auxiliaries to the attendants in preventing other patients to escape. Along industrial lines they may be trained, and, exceptionally, one develops into a finished artisan. One of the main objects of employment for imbeciles is to divert evil propensities into healthful channels. With them, "age does not count," and right here, as Barr has observed, is a seeming paradox, for the mental defectives present three ages at one time: the natural or actual age, which dates from birth; the psychologic, which is the retarded age, and the physiologic, which is generally advanced. Feeble minds go hand in hand with feeble bodies. It is a common observation to note young men with wrinkled visages, habits and bodily enfeeblement that might be expected in men of sixty years.

Malicious, pathological lying, making false accusations, pilfering and a marked cowardice are the characteristics common to most of the higher types of imbecility. Many of the criminally inclined know the nature, but few appreciate the quality of their crimes. Hence, they should not be punished in the usual way, but dealt with from a more modern conception of rectitude. Imbecility can be considered as a condition of continuous childhood. Children act on impulse and instinct rather than training, and it is not until the adolescent stage is well advanced that training takes firm root and becomes part of the individuality of a normal person. Therefore, crimes perpetrated by imbeciles are usually prompted by passion and committed on defenseless persons, and must be regarded as impulsive acts by irresponsible parties, whose inhibitory and self-denial faculties have never been sufficiently developed. No man who is normal and wants to be fair would sanction the legal execution of a ten-year-old boy, no matter how heinous and abominable the crime for which he stood convicted. Why, then, execute the imbecile? Repugnant though he be, an unchallenged enemy to

society and a known murderer, the grown-up imbecile is but endowed with the brain of a child, and is, therefore, as irresponsible. The same legal protective armament which is thrown around the lunatic in these premises should be held out to this type of unfortunates.

What can be done to stem the tide that is leading on to such rapid increase in the number of mental delinquents? They are increasing out of proportion to the increase of normal population. In combatting disease, the physician seeks for and endeavors to remove the cause. Impending danger of an epidemic is met by prophylactic measures. The causes of mental deficiency are so numerous and would carry the investigators into so many intricate ramifications of such an insurmountable nature that hope is almost lost before the problem is well faced. Dogmatic assertion is impossible as to any one cause being the supreme agent of such degeneration. This much may be said, however: The human race chooses and sets apart with great care animals best suited for breeding, and we do not exercise the same discrimination as to race culture. The ignorant and foolish enjoy equally with the wise and capable the sacred office of life-giver. This statement offers the key to the most practical solution of the problem—asexualization of the delinquent. This simple surgical procedure, once legalized and conducted under proper auspices, not as a penalty, but a remedial measure preventing crime and tending to the future comfort and happiness of the defective, will be acceptable to the public mind as a matter of course in dealing with defectives—regarded just as is quarantine—simply a protection against ill. Unless some such plan is followed we may again, in future generations, be forced to adopt the measures so effective in old Sparta.

TETANUS RESULTING FROM THE BITE OF A PIG.

By J. T. CAPPEL, M. D., Alexandria, La.

The unusual source of this infection prompts me in reporting this case.

Case. Married female, age 21 years; family history, negative; past history, usual diseases of childhood, otherwise in perfect health.

Present Illness—I was called to see patient on the night of May 18. She complained of severe pains in her neck and back. On questioning her she denied having had a nail puncture or any other wounds; upon further questioning she said that on May 12, while holding a small pig to put a wire in his nose, the pig bit her on the left thumb. She painted the thumb with iodine and never thought of it afterwards.

Thursday, May 17, she had headaches and pain in her neck and back, but was not sufficient to keep her from her daily work. Friday night I was summoned, and, upon examination, found as follows: A powerfully developed young white female, face flushed, conjunctiva congested, a slight Oriental expression of the face. Her mouth was firmly closed and she was unable to open it sufficiently to take food; her temperature was 99.5°; pulse 80, and full volume.

I gave her a hypodermic of morphia one-quarter grain, hyoscine $\frac{1}{100}$ grain, and a large dose of magnesium sulphate. I opened the wound on the thumb and cauterized thoroughly with carbolic acid. I was unable to give antitoxin that night, for it was nine miles from town and the roads were bad. On the morning of May 19 I gave her 2,000 units deep into the thumb and surrounded its base; I then gave her 18,000 units intravenously. She was then given chloral hydrate, grains 15; sodium bromide, grains 30, often enough to keep her relaxed. The intervals between doses varied between one and a half to five hours. Aspirin was given at intervals for headache. May 20 she received 10,000 more units intravenously; her temperature was then 99°; pulse 80. Her jaws were relaxed sufficiently to take liquid and soft foods. May 23 patient had a slight convulsion; she was given 5,000 units intravenously and 5,000 units in the abdominal wall. Chloral, bromides and aspirin were continued. She was given large quantities of fluids, and enemas were given often to keep the lower bowels emptied.

The temperature ran from 98.6° to 101.4°. May 26 she complained of not being able to see well; she could not count fingers at a distance of five feet. The next day she had hallucinations and delusions. May 29 her mental condition and sight both were greatly improved; temperature was normal.

The patient came to my office on June 12; her mind was apparently normal and vision normal. She said that she did not remember a thing from May 19 to May 29; she felt as if she had been asleep about three days.

Considering the therapeutics of this case, was it advisable to give the antitetanic serum intraspinally or not? Many authors claim the intrathecal route the more efficacious; others make claim for the intravenous. There are six routes in which tetanus antitoxin may be administered in the treatment of tetanus. The intracerebral route will never be used by the average practitioner; the intraneural route will only be used in a few cases; the other four routes are more in common use. The subcutaneous, intramuscular, intravenous and intrathecal routes are chiefly practiced to-day. It has been proven by actual experience that the former routes are the least efficacious; mild cases may be cured by the intramuscular route. At present we select either the intravenous or intrathecal, or the combination of both.

Major F. W. Andrew, of London, prefers the intrathecal route (he has had a wide field of experience in the present European war), while Major H. R. Dean reports twenty-five cases with complete data*; fourteen cases he treated by the intravenous route. His conclusions are as follows:

“In the treatment of tetanus it is obviously desirable to distribute an antitoxin to every part of the central nervous system; the arteries and blood capillaries, with which every part of the gray matter is so liberally supplied, afford ideal channels for the distribution of antitoxin to every region of the brain and spinal cord. On the other hand, serum injected to the lumbar region will in time pass up in the subarachnoid space and may filter through to the cells of the cervical cord, medulla and brain. It is precisely these centers in the cervical cord and in the medulla oblongata which it is most necessary to protect from the tetanus toxin. It is difficult to believe that serum injected into the lumbar theca reaches the cells in the medulla more quickly than serum which is injected into the vein. Moreover, the endothelium of capillary blood vessels freely permits the passage of an albuminous fluid; the lymph, which bathes the cells of the body, while the cerebro-spinal fluid secretion of an epithelium, which holds back almost completely the proteins of the blood, is not, under normal circumstances, concerned in distribution of albuminous substances, and it is difficult to see why it should be chosen as a medium for introduction of antitoxin to the tissues of the central nervous system. The natural channel for the distribution of albuminous substance like antitoxin would seem to be arteries and capillary blood vessels.”

The amount of antitoxin that could be given in the intrathecal

* *The Lancet*, May 5, 1917.

route at a single interval is limited, on account of its volume, while in the intravenous route can be given in unlimited amounts. That is the essential point in the treatment of tetanus, just as in the treatment of diphtheria; give the greatest number of units possible at once.

The question of asepsis is to be considered. Very few of our cases are able to be sent to a hospital. For the intrathecal route of treatment, the most rigid asepsis has to be enforced, and even then it is dangerous, while in the intravenous route the ordinary asepsis, as practiced in giving "606," is quite sufficient. I have never seen a serious infection following intravenous medication. The intravenous route is practically painless, much easier to administer, and does not require an anesthetic. The sudden flare-up of temperature, headache and dizziness which follow spinal punctures are never seen in the intravenous route.

It has been demonstrated that tetanus antitoxin in considerable amounts has been found in the cerebro-spinal fluid twenty-four hours after the intravenous injection of 30,000 units of tetanus antitoxin.

This case differs in some respects from the average case of tetanus seen in the European war. Practically all cases of tetanus in Europe had a prophylactic injection of tetanus antitoxin; this increases the incubation period, and the cases are not as severe. This case had no prophylactic treatment, and the incubation period was only six days. This is indicative of a very severe infection. Being guided by our exalted Professor Matas, his dictum, "The shorter the incubation period the graver the prognosis. * * * Any case that develops symptoms within seven days should always be considered a most serious case."

In view of our present knowledge, the intravenous route seems the most practicable and satisfactory, but I do not advise against the combined intrathecal and intravenous route in hospital practice.

PROCEEDINGS OF THE AMERICAN SOCIETY OF TROPICAL MEDICINE

SUPRARENAL SYNDROME IN PALUDISM.*

By CLEMENTINO FRAGA, M. D.,
Professor of the Faculty of Medicine,
Bahia, Brazil.

At the session of the Sociedade Medica dos Hospitaes da Bahia, held on December 17, 1916, I had occasion to present a patient in a convalescent state, of suprarenal insufficiency, in whose blood a great many malarial parasites of a tropical variety were found.

That was the first instance I had met with such a case, and at the time I was unaware that any notes had been published, either in this country or abroad, on suprarenal affections, acute or chronic, imputed to paludism. I therefore considered it as a new aspect of the great tropical parasitosis, on the strength of the irrefutable demonstration of Laveran's parasite in the blood of a patient showing clinical phenomena of suprarenal insufficiency, evidenced by intense muscular astheny, deep adynamy, hypothermy, weak, unstable, irregular pulse, disturbance of the digestive organs, such as vomiting, diarrhea, meteorism, pains in the abdomen, etc.

Some days later a new case occurred in our ward, connected with the same cause and exhibiting the same clinical characteristics.

I wish to draw attention here that, upon presenting my first patient to the Sociedade Medica dos Hospitaes, I suggested to that assembly the possibility of the suprarenal gland being injured in paludism, in consideration of the easy aggression of some organs by a disease originally having its seat in the blood, and in consequence allowing of it being quickly localized in any part of the organism. And is it not likely that the algid and asthenic forms might mean a suprarenal injury of tropical malaria, considering the clinical phenomena through which it shows itself and bearing in mind the exaggerated symptoms of the acute insufficiency?

I believed that I was original in my observations when I read in the American journals, the *Medical Record* of January 6, 1917, and the *Journ. of the Amer. Med. Assn.*, also in January, that Paiseau and Lemaire equally observed, nearly at the same time, some cases of suprarenal insufficiency in paludism, with necro-

* Read by title at the Fifteenth Annual Meeting of the American Society of Tropical Medicine, New York, June 5, 1917.

scopical examination, in which the injury of the glands was proved.

It is obvious that at the time when I made my observations I did not know of Paiseau and Lemaire's cases, as communication with America and Europe are just now very uncertain. My first case, presented in December, to the Sociedade Medica dos Hospitaes, is dated November, and it was in the American journals of January that I read the report of the French authors.

Here is a resumé of my observations:

I. V. S., twenty years old, a black man, bachelor, porter, native of Bahia, was admitted into the Santa Izabel Hospital, S. Vicente Infirmary, on November 15, 1916. Adynamic condition, passive attitude, indifference, almost not being able to answer the anamnestic questions. Pronounced muscular astheny, hypothermy, weak, irregular pulse, vomiting, diarrhea, abdominal pains, hypotension (arterial tension 10 ma. and 5 mn—oscillometer Pachon). Increasing growth of the spleen; small enlargement of the liver; normal reflexes. The objective examination of the other organs did not reveal any abnormal condition. Considering in the first instance clinical suspicion of a suprarenal insufficiency, an opotherapical treatment was undertaken, together with cardiotonics and stimulants. Slight improvement of the patient; the vomiting and diarrhea diminish; the muscular astheny continues to be intense. Some supplementary examinations are made, which demonstrate the existence of Laveran's hematozoon in the blood (of a tropical variety).

The specified remedy answers the case, assisted by opotherapy. All the phenomena gradually disappear; the patient begins to gain strength; the temperature returns to the normal, after having attempted to rise after the first doses of quinin; the tension seeks to reach the normal degree. Complete recovery of the patient, who leaves the hospital the 23rd of December.

II. V. W., 21 years old, a black man, bachelor, native of Germany, merchant, living at Retiro, a suburb of the capital, admitted on January 3, 1917. Complete prostration, inert in bed, cold limbs. He answered as to his nationality, but nothing else. Vomiting, diarrhea, abdominal pain, weak pulse, almost filiform, hypothermy (35.°6 C.), arterial hypotension, inclined to collapse.

The objective examination showed no more than the increased volume of the spleen, abdominal meteorism, pain in the right iliacal pit, the liver normal as to its bulk (13 per cent); tension ma. 10, mn.3—Vaquez).

The remedy urgently required having been prescribed, and profiting by previous experience, in view of the suspicious quarter where the patient lived, I at once examined his blood, with positive result, and cured the patient, who left the hospital on February 7.

In consideration of these cases, and the contribution of Paiseau

and Lemaire—very important from an anatomical standpoint—I believe I have thoroughly demonstrated the lesion of the suprarenal glands of a *suprarenal form of paludism*, suggested to the Sociedade Medica dos Hospitaes.

These lines are, as it were a preliminary note, the subject of which is to be treated in detail by one of my assistant pupils in his thesis.

BLISTER BEETLES AS A PUBLIC NUISANCE.

BY

ALBERT J. CHALMERS, M. D., F. R. C. S., D. P. H.,
Wellcome Tropical Research Laboratories,

AND

HAROLD H. KING, F. L. S., F. E. S.,
Wellcome Tropical Research Laboratories,
Khartoum.

Contents: Introductory—Khartoum Epidemic—Ætiology—Diagnosis—Prognosis—Treatment—References—Illustrations.

Introductory: The knowledge that blisters can be caused upon the skin by the contact of certain kinds of beetles is extremely ancient. We have been unable to trace any reference to them in the writings of Susruta but they were used as internal medicines for jaundice, apoplexy and dropsy by Hippocrates in the 5-4th. century B. C. who however was apparently unacquainted with their blistering properties while the name "*Cantharis*" was used by Aristotle in the 4th. century B. C. Dioscorides in the first century Anno Domini stated that the variety possessing yellow transverse bands and a large, fat, oblong body were more efficacious than those of only one color. Pliny, also in the first century, advised their use for skin diseases such as leprosy and lichens, as an emmenagogue, and as a diuretic. He also mentions that they will cause blisters and eschars on the skin, a fact said to have been discovered by Archigenes (Fumouze) a contemporary of Celsus, but there appears to be some doubt about this and it is possible that the credit should be given to Aretaeus the Cappadocian (D'Orbigny), but our literature in Khartoum does not permit us to settle this point. Pliny says that while all authors are agreed that the wings are the best parts from which to obtain the medicinal remedy still they are by no means unanimous in their opinions as to the origin of the blis-

tering fluid some thinking that it comes from the mouth and others from the feet. He recognized three varieties: one plump and fat with yellow markings on its wings, another smaller, broad and hairy, and a third, which he says is the worst of all and the least efficacious as a medicine, "*of one entire color and lean withal.*"

These writings were the classical works of the middle ages as may be judged by studying the degenerate account of these beetles given in Chapter XIX of the *Tractus de Avibus* of the 1511 edition of the *Ortus Sanitatis* which was originally published in 1491 being largely, *but by no means wholly*, based upon the earlier German *Herbarius* which in its turn is thought to be derived from manuscripts of great antiquity. In this way ancient knowledge was kept alive and Moffat enabled in 1634 to write a long chapter on *Cantharides* which appears to have further stimulated interest in these matters. Thus when Linnaeus, Fabricius and later Latreille began to systematize the information collected together concerning these insects it was found that a number of genera could be formed, the species of which were scattered all over the world, while still later Burmeister invited attention to several varieties found in the Tropics.

There is a book consisting of some 554 pages written by Beauregard and entitled "*Les Insectes Vésicants*" which appeared in Paris in 1890 but this work seems to be entirely out of print and cannot be obtained although we have made many attempts to do so.

Notwithstanding all this ancient and modern knowledge books upon Tropical Medicine are singularly silent on this subject and, except for very brief references in the latest edition of Mense's Handbook and a still briefer mention in Castellani and Chalmers' Manual of Tropical Medicine, we are not aware that the subject has been brought to the notice of the Tropical Practitioner and yet it is of importance for as Rodhain and Houssiau have pointed out it is not easy to account for the occasional occurrence of cases showing an eruption of a few scattered blisters on the neck, back, arms or legs until an epidemic forcibly brings the subject to one's knowledge.

The lack of book information with regard to this form of Dermatitis in the Tropics has however been considerably improved of late years by certain papers which we will briefly review.

The first, with which we are acquainted, is that published in 1912 by P. Da Silva in which he draws attention to an outbreak of a skin

eruption characterized by erythema, and intense pruritis followed by ulceration and cicatrisation among cultivators working on the banks of the rivers, Sao Francisco, Itapicurû and Jacuricy in the interior of Bahia. This was traced to an insect called by the natives Podo or Trepa moleque and which he identified as *Paederus columbinus* de Laporte (1832) which belongs to the order *Coleoptera* Linnaeus 1735 and to the family *Staphylinidae* Leach 1817.

The second reference is that by Adolf Eysell in the 2nd edition of Mense's *Tropenkrankheiten*, page 247, where he draws attention to *Paederus peregrinus Fabricius* (1801), which causes erythema, vesication and eschar formation among the inhabitants of the island of Sunda in the Malay Archipelago.

The third reference is that by Rodhain and Houssiau in 1915 when they gave an account of an epidemic of a *Seasonal Vesicular Dermatitis* occurring in Léopoldville in the Belgian Congo in April and May of that year. They traced this epidemic to an unknown species belonging to the genus *Paederus* Fabricius 1775 i. e. allied to the species mentioned above by P. Da Silva. In the discussion on this paper Roubaud stated that seasonal vesicular dermatitis was frequently observed in Senegal where *Epicauta flavicornis* Dujardin (1838), *Cantharis vestita* Dufour (1821) and a species allied to *C. melanocephala* were known to be present. Bequaert also stated that he was acquainted with a vesicular dermatitis occurring at Boma in the Belgian Congo.

The last reference is that by P. H. Ross in 1916 describing an outbreak of a vesicular dermatitis in the months of July and August in Nairobi in British East Africa which was traced to *Paederus crebripunctatus* Epp. (sic).

This completes the literature as we know it with our restricted facilities for reference and we will therefore pass on to the consideration of the Khartoum epidemic.

Khartoum Epidemic: We are well acquainted with the fact that every year in or about the month of August blister beetles may be seen in the early morning on herbs, bushes or trees in Khartoum and that at night they may invade houses or may be found in gardens being especially attracted by the artificial light.

It is customary in this town in the hot weather to have the evening meal in the garden in which the greater portion of the evening is spent and, as it is usual to have these gardens illuminated, it is obvious that the beetles have every opportunity for coming in con-

tact with the human being. Nevertheless as a rule few people suffer from their attacks, but this was quite different in August, 1916 when, for some reason or another, they were specially abundant in the gardens of the British Barracks, the Gordon College and the Sudan Club and a large number of Europeans, including some 40 British Soldiers, suffered from their attacks. Egyptians suffered but slightly and we are not aware of any true native of the Sudan being attacked. So long as the insect merely walks over the skin, and is not irritated, it does no harm. If however it starts to crawl up the arm, down the neck or up the trousers it is soon annoyed by the clothing and excretes the blistering liquid.

If only a small quantity of this fluid is ejected then only a single small bulla may form as is depicted in Fig. 4, but if it moves a series of these may be produced. If however the blistering fluid is well rubbed into an area then an eschar forms, with considerable surrounding irritation, as is shown in Fig. 6 which was taken from the elbow of a person in whom a series of blisters ran from the wrist to the arm but were worst about the elbow. Occasionally, instead of a series of blisters, one long blister may extend a considerable distance along the fore arm or down the back.

Usually there are no immediate symptoms and it is only after an interval of 12-24 hours that an itching or burning sensation or even severe pain invites attention to the affected area when the blister or blisters varying in size and number as already stated are to be found full of yellowish serum and situated on an erythematous areola.

As a rule the victim does not see the insect and may not remember one crawling on him, and he may be entirely at a loss to account for the blisters. It is here that the difficulty of diagnosis arises in that the practitioner may see only one or two cases and, at the moment, may not think about these insects.

If pricked and carefully treated they quickly vanish and cause no further trouble, but if they burst, as depicted in Fig. 5, and are allowed to be rubbed by the clothing, they become raw, very tender and painful, a condition which may last for days.

More rarely a considerable portion of the blistering liquid appears to get well rubbed into one spot (Fig. 6) and then a small white eschar is formed which may be surrounded by an extensive inflammatory areola with its surface raised above the central necrotic area, and covered with numerous small red papules (Fig. 6).

The whole region becomes very painful and tender and some couple of weeks elapse before healing is completed, which generally takes place without any cicatrisation.

So far we have not met with any septic infections as the result of these sores, but in the treatment presently to be recorded we guarded against this.

After being "en evidence" for some three to four weeks the beetles disappeared and the epidemic ceased.

With regard to a name for the dermatitis described above it seems to us that with a slight modification of "bullous" for "vesicular" Rodhain and Houssiau's phrase *Seasonal Bullous Dermatitis* is peculiarly suitable as expressing the principal clinical characters of the complaint.

Ætiology: The Blisters Beetles depicted in Fig. 1 were those which were found commonly in the houses, on the tables and in the gardens of Khartoum at the time of the epidemic.

By the kindness of Mr. Kenneth G. Blair of the British Museum we are able to give the names of these insects. The lower two beetles shown in Fig. 1 are male (the smaller) and female (the larger) individuals belonging to the species *Epicauta sapphirina* Maeklin 1845, while the upper two beetles in the same figure are male and female individuals of the species *Epicauta tomentosa* Maeklin 1845.

As far as we know these two species were the only insects responsible for the epidemic for although a third species (Fig. 2) named *Mylabris nubica* de Marseul 1870* was found at this time in Khartoum still it was so rarely met with that its share in the epidemic must have been negligible. It is interesting in having yellow bands on its wing cases and according to Dr. Beam, the Research Chemist of these laboratories, beetles of this genus have been found to contain considerable more cantharidin than the usual officinal variety of blister beetle, but this species does not concern us at present and will not be mentioned again in this paper.

With regard to classification the genus *Epicauta*, which belongs to the family *Cantharidae* Leach, 1817, was founded by Count Dejean in his *Catalogue des Coléoptères 1802-1837*;" it contained at first species derived from the genera *Lytta* Fabricius 1775 and *Cantharis* Linnaeus 1735. According to D'Orbigny's Dictionnaire the type species is *Epicauta (Lytta) gigas* (Fabricius 1792) while the other

* De Marseul appears to have obtained this insect from Bohemann and gives Senegal and Nubia as its habitats.

species, which are now very numerous, are scattered all over the world.

The only other beetles so far accused of causing *Seasonal Vesicular Dermatitis* belong to the genus *Paederus* of the family *Staphylinidae* whereas our species are classified as *Cantharidae* and therefore it seems to us that it may be useful to the Tropical Practitioner to indicate how these families may be recognized.

The insects which we were investigating belonged to the order *Coleoptera* because they possessed a mandibulate mouth, a lower lip not divided along the middle and two pairs of wings of which the anterior (elytra) were shell-like and met accurately in the middle line forming a straight suture and a case like protection for a portion of the abdomen.

Our species came into Sharp's *Series 4 Heteromera* because the front and middle tarsi were five-jointed, while the hind tarsi were only four-jointed.

It was also obvious that as they possessed a head with an abrupt neck, and no coadaptation between the elytra and the sides of the abdomen while each of the claws of the feet had a long appendage (Fig. 3) closely applied to its ventral surface, they belonged to the family *Cantharidae* and, as they possessed wings, to the subfamily *Cantharinae* but the lack of literature in Khartoum prevented us proceeding any further in the classification and we fell back upon the kind help of the British Museum.

The *Cantharidae* can readily be distinguished from the *Staphylinidae* or Rove Beetles because the latter lack the characteristic appendage on the ventral aspects of the claws (Fig. 3).

It is thus evident that the beetles which we are considering are quite distinct from those found by other observers as causal agents of their epidemics.

August was the breeding season for our species as we observed the female laying its eggs. We however were unable to make any further studies in the life history of our specimens but that of an allied species *Epicauta vittata* Fabricius 1775, which is common in many parts of America, has been worked out by Riley whose results may be briefly summarized.

The beetle lays its eggs (1st. stage) in spots frequented by an American locust of the genus *Caloptenus* Burmeister 1838 and in a few days the *Triungulin larva* (2nd stage) appears and wanders about until it finds its food in the form of the locusts eggs which are laid underground. After eating a couple of eggs it moults and

becomes the *Caraboid larva* (3rd stage) which after a week moults and becomes the *Scarabæoid larva* (4th stage). Later it again moults and becomes a *second helpless Scarabæoid larva* (5th stage). It now ceases to live on the locusts eggs, which it leaves and becomes a *Coarctate larva* or pseudo-pupa (6th. stage) in which condition it remains many months. When however favorable conditions permit it becomes a *Scolytoid larva* (7th. stage) which quickly becomes a *Pupa* (8th. stage) from which in some six days the *Imago* (9th stage) emerges.

This complicated life cycle and prolonged larval existence explains the complete absence of the blister beetles from Khartoum for about eleven months of the year. In or about the month of August they are "en evidence" as this is their breeding season. In these beetles (like so many other insects) the length of the life of the adult is but short, being intended essentially for the purposes of sexual reproduction. After the eggs have been laid, the beetles die and disappear and thus the epidemic of Seasonal Bullous Dermatitis comes to an end, as the cause thereof is removed.

During their short existence the beetles spend the early morning and apparently the night on herbage, shrubs and trees in Khartoum. When the heat increases as the day grows older they seek refuge in cracks in the ground and other places from which they emerge in the cool of the evening and being attracted by artificial lights are, by this means, brought into contact with human beings.

Without doubt the blistering properties are protective and it appears to us that the active principle must be contained in the greenish fluid which can be made to exude from any part of the insect, but from no part with greater ease and less stimulation than from the joints of the legs and especially from the so-called knee joint.

Dr. Beam, the Research Chemist of these laboratories, has investigated the cantharidin content of *Epicauta tomentosa* and finds it to be distinctly lower than that of the officinal *Cantharis vesicatoria*, but there is no doubt about the blistering properties of both the species in question as an *Epicauta sapphirina* was caught by a British Soldier on his neck, where subsequently a blister appeared, and although Captain Innes, R. A. M. C. tried the experiment of rubbing *E. sapphirina* on his arm and failed, for an unknown reason, to produce an eruption, he was very successful with *E. tomentosa*, the result being shown in Fig. 5.

There are of course many more blister beetles known to exist in the Sudan but the above were those which we met with in connection with "*Seasonal Epidemic Dermatitis*" which we have described above.

Diagnosis: The characteristic feature of *Seasonal Bullous Dermatitis* are as follows:

1. The sudden appearance of bullæ, varying in size and number, surrounded by a certain amount of inflammatory redness.
2. The persons in whom the bullæ are found are usually in good health; and, as a rule, they are unable to assign a cause for the eruption.
3. The bullæ are single or grouped together, often in a row.
4. There is no tendency to bilateral symmetry.
5. In a given individual usually only one region of the body is affected.
6. A number of healthy people living in the same place may be similarly affected at the same time.
7. The bullæ only appear during a certain season of the year.

The differential diagnosis requires to be made from the following accidents and disease causing bullæ:

1. Seasonal Bullous Dermatitis may be readily separated from the bullæ caused by burns and scalds, and by chemicals, by the history of the case.

2. It has also to be differentiated from the various forms of *Hydroa* as follows:

- a. It can be separated from the milder forms of *Dermatitis herpetiformis* by the absence of severe itching and of circinate and papular erythematous lesions and by the absence of the tendency of the bullæ to be grouped like herpes.

- b. From the rare form of *Dermatitis herpetiformis* called *Hydroa pruriginosa* it can be diagnosed by the larger size of its bullæ which do not appear in successive crops.

- c. From *Dermatitis recurrens* it can be distinguished from the hiemal variety by only appearing in warm weather and from the æstival in not being papulo-vesicular in character.

3. It may be differentiated from *Herpes Zoster* by the absence of severe pain lasting for 3-4 days before the appearance of the eruption and by the non-distribution of the bullæ in Head's areas.

4. From *Acute Pemphigus* it is easily separated by the absence of the severe constitutional symptoms.

5. It can be recognized as distinct from *Dermatitis venenata* due to plants by the absence of the marked œdema and erythema which generally attack the face, hands and genitalia and by the presence of bullæ.

6. It is easily separable from *Dermatitis* caused by mites as these give rise to small wheals and vesicles and not to bullæ.

7. Ant and tick bites, stings of wasps, bees, scorpions, centipedes, etc., are at once differentiated because the eruption in the present instance is bullous.

As the eruption described by Rodhain and Houssiau and by Ross are stated to be vesicular it is possible that these may be differentiated clinically from our bullous type, while it certainly is not so severe as the eruption described by P. Da Silva in that ulceration and cicatrization are absent but perhaps these may be only differences in details and not in essentials.

Prognosis: As all our cases recovered fairly rapidly and as we have not met with any signs of cicatrization the outlook as regards rapidity of cure and the absence of scarring is good.

As we have never met with any case of septic infection directly referable to this eruption the outlook as regards this possible complication is also good.

It will however be remembered that P. Da Silva describes a much severer form of dermatitis than that which we observed and that this was followed by cicatrization.

Treatment: The best treatment in our experience is to prick the blister and apply a dressing of 1 in 80 Carbolic Acid, but the majority of the victims just let the lesions alone and they heal up rather more slowly than when treated and are more painful. If they become rubbed, they are often very painful as was the one depicted in Fig. 5.

Khartoum, March 5th., 1917.

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ILLUSTRATIONS.

These Photographs May With Advantage be Examined by Means of a Reading Lens.

- FIG. 1. Blister beetles concerned in the Khartoum Epidemic of Seasonal Bullous Dermatitis. The large beetles on the right hand side are females and the smaller on the left hand side are males. The upper and smaller pair belong to the species *Epicauta tomentosa* Mæklin 1845, while the lower and larger pair belong to the species *Epicauta sapphirina* Mæklin 1845.
About natural size. Photograph.
- FIG. 2. Small blister beetle with yellow bands on its wings. This beetle belongs to the species *Mylabris nubica* de Marseul 1857, and apparently was not responsible for the epidemic, as it was rarely met with.
About natural size.
- FIG. 3. A claw from *Epicauta sapphirina* showing the long appendage which in the natural condition is closely applied to it.
x 37 diameters. Photomicrograph.
- FIG. 4. Small blister just above the ankle in an Egyptian army officer.
Less than natural size. Photograph.
- FIG. 5. An unburst and burst blister produced experimentally by means of *Epicauta tomentosa*.
Less than natural size. Photograph.
- FIG. 6. The elbow of a case of severe dermatitis produced by one of these blisters. There was also a row of blisters running along the forearm for a short distance above the wrist and three small blisters on the arm above the elbow.
Less than natural size. Photograph.

MYCETOMA AND PSEUDOMYCETOMATOUS FORMATIONS.

BY

ALBERT J. CHALMERS, M. D., F. R. C. S., D. P. H.,
Wellcome Tropical Research Laboratories,

AND

CAPTAIN R. G. ARCHIBALD, M. B., D. S. O., R. A. M. C.,
Wellcome Tropical Research Laboratories,
Khartoum.

Contents: INTRODUCTORY—THE MYCETOMAS—THE PARAMYCETOMAS—THE PSEUDOMYCETOMAS—DIAGNOSIS—PROGNOSIS AND TREATMENT—SUMMARY—REFERENCES—ILLUSTRATIONS.

Introductory: The tropical practitioner usually understands by the word Mycetoma a swelling in some part of the body which, when first seen, is often discharging pus from one or more sinuses (Fig. 1), while in this pus he is able, without much difficulty, to detect hard or soft bodies of varying size and color. These bodies he calls grains (Fig. 2, 3 and 4), and he also recognizes as belonging to the Mycetoma Group all tumours in which he is readily able to see these bodies after removal of the whole or a portion of the growth (Fig. 5).

There is therefore no particular difficulty in the diagnosis of Mycetoma, if it be defined so as to cover the above conditions only, but there is considerable difficulty in classifying those Sarcomatous and Epitheliomatous-like growths in which grains are either absent, or are almost microscopical in size, and are therefore neither self-evident in the discharge nor in the tissue itself. After very con-

siderable experience of the difficulties in diagnosis of this form of tumour we have decided that it is worthy of a special name and definition and as the only common feature of the heterogenous collection of specimens which has been gradually gathered together in this laboratory is the fact that a fungus can be found with or without the presence of minute bodies of the same nature as the typical grain, we have decided to call this group of tumours *Paramycetomas*.

From a clinical point of view there are conditions of the foot found in certain general diseases which more or less resemble a Mycetoma in external characters, but in the discharge from which grains cannot be found. As these appear to be of importance from a diagnostic point of view we desire to emphasize their existence by terming them *Pseudomycetomas*.

It is with the intent of defining these various groups of mycetomas, paramycetomas and pseudomycetomas and their causal organisms as well as their clinical differentiation and treatment that we venture to bring the following remarks to the notice of the Members of the American Society of Tropical Medicine.

The Mycetomas: In a recent paper entitled "A Sudanese Maduromycosis" we have proposed a definition of the term Mycetoma which, with slight modifications, is as follows:

"The term *Mycetoma* includes all growths and granulations which produce enlargement, deformity or destruction in any portion of the tissues of men, or animals, and which are caused by the invasion of the affected area by fungi, belonging to different genera and species, which produce bodies of varying dimensions, color and shape composed of hyphæ, and sometimes chlamydospores, embedded in a matrix. These bodies, which are capable of giving rise to mycelial filaments on germination, are termed *grains* and are found either embedded in the pathological tissue forming these growths and granulations, or escaping freely in the discharge therefrom."

This definition is illustrated by Fig. 1, which depicts the sinuses on the skin of an advanced Mycetoma of the foot and at the same time shows its internal appearances and the presence of grains in situ.

Fig. 3 shows in greater magnification a black grain, while Figs. 2 and 4 illustrate the appearances of yellow and red grains, respectively.

Grains are sometimes soft and sometimes hard, but the latter may have their consistence diminished by soaking in caustic soda

solution or in eau de Javelle. The naturally soft or the artificially softened grain may be placed in a little water and teased into small pieces by needles and subsequently flattened by applying pressure by means of a cover glass, or (as often can be done) a preparation can be made by taking a small portion of a grain, surrounding it with a little water and pressing it flat by means of a cover glass.

If these simple preparations are examined first by a one-sixth of an inch dry objective and subsequently by an oil immersion lens it will be found that they are composed of two quite different types of fungi.

Fig. 6 shows a portion of a hard yellow grain treated as described above, and it will be noticed that the fungus depicted is composed of large segmented mycelial filaments possessing well-defined walls, while one thick-walled chlamydospore can also be seen on the right margin of the photograph.

Fig. 7, on the other hand, depicts quite a different type of fungus composed of very fine non-segmented mycelial filaments, in which the walls are not well defined and in which chlamydospores are absent.

This is a striking difference, and so simply made out, that it appeared to us to be suitable for the purposes of *clinical diagnosis* and also for *scientific classification*.

We therefore divide the *Mycetomas* into two groups, as follows:

- | | |
|--|--|
| I. Grains containing large segmented mycelial filaments. | Subgroup A.
<i>The Maduromycoses.</i> |
| II. Grains containing very fine non-segmented mycelial filaments, looking like bacilli embedded in a matrix. | Subgroup B.
<i>The Actinomycoses.</i> |

We will now consider the further differentiation of these two main divisions of the *Mycetomas*.

Subgroup A. The Maduromycoses: This form of *Mycetoma* may be further classified, according to the color of the grains, into:

- I. Black Maduromycosis.
- II. White or Yellow Maduromycosis.
- III. Red Maduromycosis.

I. *Black Maduromycosis:* This variety of *Maduromycosis* is, in our opinion, best classified according to the continent in which it is found, as follows:

- a. The American Black Maduromycoses.
- b. The African Black Maduromycoses.
- c. The European Black Maduromycoses.
- d. The Asian Black Maduromycosis.

a. *The American Black Maduromycoses*: These have been studied in a most admirable manner by Wright as long ago as 1898 and by Seheult more recently (1916) and are capable of being divided into:

1. *Wright's Black Maduromycosis*, found in the United States and of which the systemic position of the causal fungus is unknown. As this case occurred in an Italian woman, who had left Italy, where the infection is known to occur, an indefinite number of years before the onset of the disease, it is open to doubt whether the disease was acquired in America or in Europe. This is especially so, as there is no history as to whether she *did* or *did not* visit Italy during the incubation of the complaint.

2. *Seheult's Black Maduromycosis*, of which the nature of the causal organism is unknown. Again it is interesting to note that the case occurred in a native of India, who had left that country some twelve years before the onset of the disease, and apparently during this period he had never returned to India.

These two cases, separated by such a long interval, are the only two Black Maduromycoses with which we are acquainted as occurring in America, but perhaps some of the members of the American Society of Tropical Medicine may be able to correct us and to add to the numbers of such cases. Indeed, the point is of considerable interest, because upon it turns the answer to the question whether there is, or is not, Black Maduromycosis in the American Continent. It will be observed that in both of the recorded cases the victim was a native of Italy or India, from both of which places cases of Black Maduromycoses have been reported. We are quite unacquainted with the latency of the disease—*i. e.*, of the fungus can lie latent in the tissues for years, being kept in check by the natural defensive mechanism of the body until the local resistance of the part is lowered by a blow or other injury, when the causal agent is enabled to grow, and so cause the Mycetoma.

b. *The African Black Maduromycoses*: Four varieties of this form of Black Maduromycosis are known, viz:

1. *Brumpt's Black Maduromycosis* found at Djibouti in French Somaliland and caused by *Madurella mycetomi* (Laveran, 1902).
2. *Nicolle and Pinoy's Black Maduromycosis* found in the Oasis of Tozeur, in Southern Tunisia; and caused by *Madurella tozeuri* (Nicolle and Pinoy, 1908).
3. *Bouffard's Black Maduromycosis*, also found at Djibouti, in French Somaliland, and caused by *Aspergillus bouffardi* Brumpt, 1905.
4. *Chalmers and Archibald's Black Maduromycosis*, found at Khartoum, in the Anglo-Egyptian Sudan, and caused by *Glenospora khartoumensis* Chalmers and Archibald, 1916.

The further differentiation may be effected as follows:

A. Microscopical preparations show As- *Bouffard's Black*
pergillar heads. *Maduromycosis*

B. Microscopical preparations do not show any Aspergillar heads (Fig. 8), but on cultivation the following types of spores are found:

a. The Arthrosporal type of Thallospore (for the explanation of these names see Chalmers and Archibald, 1915, in references).

1. Grains larger than a *Brumpt's Black*
pin's head in diam- *Maduromycosis*
eter.

2. Grains smaller than a *Nicolle and*
pin's head in diam- *Pinoy's Black*
eter. *Maduromycosis*

b. The Aleuriospore form of *Chalmer's and*
the conidial type of spore *Archibald's Black*
(Fig. 10). *Maduromycosis*

c. *The European Black Maduromycoses*: The causation of only one variety is known with certainty, and from this the other two may or may not be separable. At present it is better to consider the following three forms as distinct, pending further investigation:

1. *Bassini's, Köbner's and Schmincke's Black Maduromycosis*, respectively found in Padua, Italy (we are unacquainted with the particular locality), and in Kissingen, and of which the nature of the aetiological fungus is unknown.

2. *Bovo's Black Maduromycosis*, found in Genoa, and of which the causal agent is called *Madurella bovoi* Brumpt 1910, but this classification must be accepted with reserve, as the fungus has never been cultivated and may not agree with the definition of the genus *Madurella*, as altered by Pinoy in 1912, subsequent to the cultivation of *M. mycetomi* and *M. tozeuri*.

3. *Pepere's Black Maduromycosis*, found at Domusnovas, in the province of Cagliari, in Sardinia, and caused by *Scedosporium sclerotiale* Pepere 1914.

It may be that all these varieties of Italian Black Maduromycoses belong to one and the same causal agent, viz: Pepere's organism, but this is a question which only future investigations can decide, and it may be that this was the cause of Wright's American Black Maduromycosis, but this is a point which cannot now be settled.

d. *The Asian Black Maduromycosis*: This type of Black Maduromycosis requires more investigation, as at present only one form is known, viz:

1. *Carter's Black Maduromycosis*, found in India, and caused by a fungus cultivated from a case occurring in an Indian soldier in France by Captain H. C. G. Semon, M.D., R.A.M.C. So far, this fungus has remained unnamed, but we now propose the nomenclature: *Glenospora semoni* Chalmers and Archibald 1917, and we distinguish it from *Glenospora khartoumensis* by the differences exhibited in cultures on clear maltose agar, on glucose agar and on blood serum. Figs. 11 and 12 depict the marked differences of the growths on clear maltose agar.

II. *White or Yellow Maduromycosis*: This division of the Maduromycoses may be classified, like the black, by the continents in which the cases became infected, as follows:

- a. The African White Maduromycosis.
- b. The European White Maduromycoses.
- c. The Asian White Maduromycosis.

It will be observed that we are unacquainted with any American White Maduromycosis.

a. *African White Maduromycosis*: Only one variety is known, and this is:

Nicolle and Pinoy's White Maduromycosis, found at Sadiki, in Tunisia, and caused by *Sterigmatocystis nidulans* (Eidam, 1883).

The grains, which are very small, are white or slightly tinted, and on disassociation show septate and branched filaments, with expanded extremities on some, of which spores arranged in rows can be seen. It has been cultivated successfully.

b. *European White Maduromycoses*: Two forms of this variety are known: viz:

1. *Brumpt and Reynier's White Maduromycosis*, found in Paris and caused by *Indiella reynieri* Brumpt 1906.

2. *Tarozzi and Radcl's White Maduromycosis*, found by the former at Ibono, in the Province of Cagliari, in Sardinia, and by the latter near Florence, and caused by *Scedosporium apiospermum* (Saccardo, 1911).

The two varieties are easily differentiated by the varying characters of the grain. In the French variety this is large (up to one millimetre in diameter), soft and appear like a ribbon rolled on itself. It is composed of fine branched septate filaments with evident walls, and thick-walled chlamydospores.

In the Italian variety the grain is small, rather hard and yellowish.

c. *Asian White Maduromycosis*: We are only acquainted with one type—*i. e.*:

Brumpt's White Maduromycosis, found in India and caused by *Indiella mansonii* Brumpt 1905.

III. *Red Maduromycosis*: There is only one form of Red Maduromycosis known, viz:

Balfour and Archibald's Red Maduromycosis, found at Port Sudan, in the Red Sea Province of the Anglo-Egyptian Sudan, and characterized by possessing very hard, spherical grains of a rich red color, showing indications of an aspergillar-like fungus of unknown classification.

Subgroup B. The Actinomycoses: The second division of the mycetomas contains eleven examples, which may be further classified according to the color of the grains into:

- I. Black Actinomycosis.
- II. Yellow Actinomycosis.
- III. Red (sometimes yellowish) Actinomycosis.

I. *Black Actinomycosis*: Only one variety of this is known viz:

Babe's and Mironescu's Black Actinomycosis, found in Roumania and caused by an unknown fungus.

II. *Yellow Actinomycosis*: This form is well known in North America, and Sutton, of Kansas City, in 1913, in addition to drawing attention to four previously described cases, added two from his own practice. The usual microscopical appearances shown in Yellow Actinomycosis are depicted in Fig. 19, but the only method, known to us, of distinguishing the nine forms of Actinomycosis classifiable under this heading is by cultivation, as will be indicated below. The nine varieties known to us are:

1. *Israel's Yellow Actinomycosis*, found in Europe and America (North and South), and caused by *Cohnistrepthrix israeli* (Kruse, 1896).
2. *Ravaut and Pinoy's Yellow Actinomycosis*, found in France and caused by *Cohnistrepthrix thiergei* Ravaut and Pinoy 1909.
3. *Acland's Yellow Actinomycosis*, found in Europe, but the distribution of this form requires further investigation. It is caused by *Nocardia Bovis* (Harz, 1877).

4. *Bouffard's Yellow Actinomycosis*, found at Djibouti, in French Somaliland, in the Anglo-Egyptian Sudan, and in Southwest Africa, and caused by *Nocardia somaliensis* (Brumpt, 1906).
5. *Krause's Yellow Actinomycosis*, found in Europe and caused by *Nocardia krausei* (Chester, 1901).
6. *Garten's Yellow Actinomycosis*, found in Europe and caused by *Nocardia garteni* (Chester, 1901).
7. *Hesse's Yellow Actinomycosis*, found in Europe and caused by *Nocardia liquefaciens* (Hesse, 1892).
8. *Chalmers and Christopherson's Yellow Actinomycosis*, found in the Anglo-Egyptian Sudan, where it appears to be not uncommon and caused by *Nocardia convoluta* Chalmers-Christopherson 1916.
9. *Eppinger's Yellow Actinomycosis*, found in Europe, America (North and South), Asia and Africa, and caused by *Nocardia asteroides* Eppinger 1890.

These Yellow Actinomycoses may be differentiated as follows:

- | | |
|--|--------------------------------------|
| I. Cultivation difficult; grow best anaerobically; arthrospores absent. | Genus 1
<i>Cohnistrepthothrix</i> |
| a. Clubs present: | |
| 1. Grains yellow. | 1. <i>israeli</i> |
| 2. Grains very small and white. | 2. <i>thibiergei</i> |
| II. Cultivation easy; grow best aerobically (Figs. 13 and 14); arthrospores present (Fig. 15). | Genus 2
<i>Nocardia</i> |
| a. Clubs present (Fig. 18) | |
| b. Clubs absent (Fig. 16): | |
| 1. Grains surrounded by a hard sheath, insoluble in liquor potassa and eau de Javelle. | 4. <i>somaliensis</i> |
| 2. Grains without such a sheath (Fig. 16): | |
| G ⁱ Growth on gelatine absent. | 5. <i>krausei</i> |

Gⁱⁱ Growth on gelatine present.

M. Inspissated blood serum
liquefied (Fig. 13):

x. Pathogenic for laboratory
animals, growth on po-
tato white, medium be-
comes greenish in color. 6. *garteni*

y. Non-pathogenic for la-
boratory animals, growth
on potato, yellowish or
buff color, medium un-
changed (Fig. 9):

rⁱ. Gelatine liquefied, and
growths not convo-
luted. 7. *liquefaciens*

rⁱⁱ. Gelatine not liquefied,
and growths markedly
convoluted. 8. *convoluta*

N. Inspissated blood serum not
liquefied, growths yellowish
orange to brick red. 9. *asteroides*

III. *Red (sometimes Yellowish) Actinomycosis*: Only one form
of which is known:

Carter's Red (sometimes Yellowish) Actinomycosis,
found in India, Hawaii, Argentina, Cuba, Senegal, Al-
geria, Cyprus and Somaliland, and caused by *Nocardia*
indica (Kanthack, 1893), synonym, *Streptothrix madurae*
(Vincent, 1894).

This organism has red or yellowish grains, which produce pinkish
colonies on the agars (Fig. 17) and on potato. Kanthack's name
was overlooked until recently.

The Paramycetomas: Specimens from different parts of the
body are often sent to these laboratories from cases which have
been diagnosed clinically, and provisionally, malignant disease
(Fig. 21) of various kinds, *e. g.*, they have been thought to be sar-
comata, epitheliomata and rodent ulcers, or sometimes merely sent

with the label "tumor," and taken from the face, limbs, body, mouth, intestines or vagina. So far, owing to the specimens being sent in preservative media, often from long distances, or owing to the growth of large numbers of contaminatory organisms, especially when the site affected is a portion of the bowel, we have failed to obtain cultures. Nor is this surprising, when in some cases the tissues and grains are found to contain these secondary bacilli. It must be remembered that a secondary blastomycotic infection has been described by Flu as taking place in a mycetoma of the foot caused by *Nocardia indica*. The microscopical sections, however, may show one of four peculiar features:

1. Peculiar eosinophile bodies (Figs. 22, 23 and 24).
2. Nocardial filaments (Fig. 20).
3. Minute grains containing Nocardial filaments and spores (Fig. 25).
4. Very rarely evidence of other organisms, septate and much broader than a typical *Nocardia* or *Cohni-streptothrix* (Fig. 26).

The tumors often neither clinically resemble the growths which we have described above as *Mycetomas*, nor are they the same as the *Pseudo-Actinomycoses* of Mosetig-Moorhof, Dor and Poncet, because these conditions are characterized by the presence of a few large yellow grains in the discharge. These grains are composed of a tangle of filaments, between which lie the usual Nocardial spores, which are often mistaken for micrococci. This *Pseudo-Actinomycosis* formation of Poncet does not differ from the definition of the Actinomycotic form of *Mycetoma* described above. Moreover, its organisms, *Nocardia ponceti* Verdun 1913 appears to agree with *Nacordia krausei* Chester 1901, of which it becomes merely a synonym.

The histological appearances of a paramycetoma may be seen in Figs. 27 and 28, but in other forms giant cells, resembling those seen in Fig. 19, may be so numerous as to give the observer the impression that he is examining a myeloid sarcoma.

Here, in our opinion, should also be classified those tumors which go by the name "*Juxta-articular nodules*" (Fig. 30), and of which we have met with two cases in the Anglo-Egyptian Sudan, where their presence has never before been recorded. These growths are caused by *Nocardia carougeaui* (Brumpt, 1909).

We therefore desire to distinguish the above condition from the Mycetomas of the Actinomycotic form, to which they are closely related, and from the *Pseudo-Actinomycoses* of Poncet, which are really Mycetomas, and therefore we suggest "*Paramycetoma*" as a suitable name.

We define *Paramycetoma* as follows:

"All growths and granulations producing enlargement, deformity and destruction in any part of the tissues of men, or animals, which are caused by the presence of fungi of any nature whatsoever, but in which grains are either entirely absent or are so few in number and small in size as to escape observation without prolonged search."

The diagnosis of this form of Mycetoma has to be made by the examination of microscopical preparations, and is based upon the discovery of one or more of the four peculiar features mentioned above, and which we will now discuss in greater detail.

1. *Peculiar eosinophile bodies*: These are the bodies variously named Eosinophile, Fuchsin, Russell or Botryomycotic-like bodies. They are depicted in Figs. 22, 23 and 24, and, in our opinion, represent some chemical substance secreted as a protective agency by the fungus growing in the tissues and may be found lying in the lymphatics, or lymphatic spaces, or in leucocytes sometimes at a relatively considerable distance from the fungus.

In our opinion, these bodies are of peculiar diagnostic help, as we are often compelled to attempt a microscopical diagnosis from a minute piece of tissue removed at some distant station and sent to us preserved in formalin.

If we find these bodies to be present, together with the further evidence in the form of:

1. Cellular exudate (Fig. 27), with its degenerate remains (Fig. 28);
2. Changes in the vessels—Endarteritis and Periarteritis (Fig. 29);
3. Pigment granules,

we feel justified, after very considerable experience, in advising the medical officer in charge of the case that it is not malignant, but fungal in nature, and that the fungus will probably be obtained if a further operation can be performed.

2. *Nocardial filaments*: There is no mistaking a Nocardial

filament by the practiced eye, though it must be admitted that they look at times very like bacilli (Fig. 20), and indeed medical literature contains many instances of this mistake. The spores, if present, look like micrococci, and therefore, when the *Nocardia* is found in the tissues and not in a typical grain, it is apt to be mistaken for these organisms.

3. *Minute grains containing Nocardial filaments* (Fig. 25): These grains are so much smaller in size and fewer in number that, in our experience, they are most difficult to find, and it is this fact which, though clearly emphasizing the relationship of these infections to the mycetomas, also brings out the point that they are worthy of a separate classification.

4. *Other organisms* (Fig. 23): Very rarely we have met with septate broader hyphæ in these sections, and this indicates that in all probability the *Paramycetomas* may in the future be classifiable into the *Paramaduromycoses* and the *Paractinomycoses*, but we do not wish to enlarge upon this section of the subject at present.

We therefore submit, for the consideration of the members of the American Society of Tropical Medicine, the possibility of a series of infections separable from but allied to the *Mycetomas*, and for which we propose the name *Paramycetomas*.

Pseudomycetoma: By this term we mean all those conditions which clinically resemble Mycetoma by the presence of swelling, ulceration and discharge, but differ therefrom in the absence of grains in the pus and in the tissues, and also in the absence of fungi and the eosinophile bodies mentioned above.

This condition is well known to occur in the tertiary stage of *Frambæsia Tropica* (Yaws) and is illustrated by Fig. 496 on page 1187 of the second edition of Castellani and Chalmers' Manual of Tropical Medicine. Breinl, in New Guinea, has described a similar condition, known to the natives by the names Roaki, Buno or Auma, which he considers is a separate clinical entity from Yaws. He says that the foot closely resembles Madura foot, without the presence of the typical grains in the pus.

A similar condition is known to occur in Sporotrichosis and is illustrated by Fig. 64 on page 298 of the well-known work, "*Les Sporotrichoses*," written by De Beurmann and Gourgerot in 1912. The foot in this case was swollen and painful and showed subcutaneous and deep gumma-like swellings. Fistulæ discharging pus were also present.

Another similar condition has been described by Austregesilo as being due to an *Angiokeratoma* in the foot of a negro in Brazil. The foot was much enlarged with several nodules, from which white material exuded. Microscopical sections enabled a correct diagnosis to be made. The whole condition, however, resembled a Mycetoma, but neither grains nor fungal hyphæ could be found. His paper contains an excellent illustration.

Diagnosis: We now come to two points which we consider to be of considerable clinical importance, viz: the diagnosis and the differential diagnosis.

The characteristic features upon which a diagnosis of Mycetoma may be based are:

1. Tumor formation of any size and appearance and with or without suppuration occurring in any part of the human body.
2. Usually the tumour is chronic in type.
3. In the discharge from the tumor, or in a small portion removed by operation, typical grains can be readily found.
4. In the discharge from the sinuses there is usually a considerable quantity of oily material.
5. On macroscopical section of a large fresh mycetoma a glassy vitreous appearance in the tissues may be observed.
6. Microscopically, eosinophile bodies can usually be found in the portion removed.

The typical features of a *Paramycetoma* are the same as those of a mycetoma, but:

1. Grains may be present, but, if so, are few and small and are readily overlooked.
2. Grains may be absent or unseen, and then the diagnosis depends upon:
 - a. The presence of fungal hyphæ or spores.
 - b. The presence of the eosinophile bodies.

The differential diagnosis is divided into two considerations:

- A. The differentiation of Mycetoma and Paramycetoma from allied conditions.

B. The differentiation of Maduromycosis and Paramaduromycosis from Actinomycosis and Paractinomycosis.

In the first of the above classes the diagnosis has to be made from:

1. Pseudomycetomatous conditions as indicated in the preceding section.
2. Sarcoma, epithelioma and rodent ulcer, by removal of a portion of the whole of the tissue by operation, followed by microscopical examination, and the subsequent discovery of grains of fungal hyphæ or spores, or of eosinophile bodies. Here we may perhaps be allowed to issue a word of warning against the rapid diagnosis of myeloid sarcoma, because of the presence of giant cells and round cells, together with hemorrhages, or again of the diagnosis of epithelioma, because of the presence of marked acanthosis with cell nests, as both these sets of conditions may be found associated with fungal infections.

More important, however, from the point of view of treatment, is the differentiation between Maduromycosis (including the "Para" variety) and Actinomycosis, also including its "Para" variety, and this can be effected, as stated at the commencement of this paper, by the simple process of flattening a portion of a soft grain in water, by pressing it between a cover slip and slide and examining it with various powers of the microscope.

In the case of a hard black grain, it may be decolorized and softened by caustic soda solution, 40 per cent, by eau de Javelle (freshly prepared), by sodium hypobromite solution (as used in urine testing), freshly prepared, or by antiformin solution. These liquids take some time to act, but eventually the grain becomes soft and decolorized and can be examined as set forth above.

When this simple examination is made it is easy to differentiate between the broad filaments of an ordinary fungus and the thin bacilliform filaments belonging to the Microsiphonales—*i. e.*, to the order in which the Norcadias and Cohnistreptothrices are grouped, and in this way to distinguish a Maduromycosis from an Actinomycosis.

Prognosis and Treatment: It is here that the practical value to the patient of an early and correct diagnosis becomes evident.

In any form of Mycetoma the correct treatment is *to remove the growth in its entirety* when it is young and not fixed to the bones, and at the same time *to remove any enlarged lymphatic glands* which may be found in association with lymphatics coming from the affected area. Cure will be established if this be done completely.

If the growth has gone too far and is involving important regions, from which it is impossible to remove it in its entirety, then the treatment depends upon the diagnosis.

Actinomycosis: Successful treatment has been reported in cases in which potassium iodide in large doses, such as ninety grains per diem, has been administered, and in cases treated by autogenous Nocardial vaccins.

Maduromycosis: So far, nothing short of complete removal, associated with extirpation of the enlarged lymphatic glands, has secured a successful result.

From the above remarks not merely the treatment, but the prognosis, in a given case may be judged.

It appears to us, however, that a practitioner should, whenever feasible, send a portion of the tissue of a Mycetoma or Paramycetoma, as aseptically removed as possible, in sterile normal saline solution at 37° C. to a laboratory, in order that growths may be made from which, if a cure by operation is impossible, the following injections may be prepared for experimental therapeutic use:

a. Vaccins.

b. Extracts of growths by various chemicals.

If he be situate at a distance from a laboratory he should procure therefrom suitable media on which to place the grains, or, if these are absent, scrapings of pieces of affected tissue aseptically removed by operation, and, in the case of grains, washed several times in sterile normal saline solution.

Tubes so inoculated should be sent at once to the laboratory, and the operation should be planned so that the least possible delay in transit shall take place.

If this is systematically done, more knowledge of the value of the various kinds of treatment in operable cases will soon be acquired.

In our opinion, it is the duty of every tropical practitioner to attempt to obtain cultures from all mycetomatous conditions which he meets with in his practice, because of the possible value of such cultures in the treatment of inoperable cases.

Summary: In the above remarks we have endeavored to summarize such knowledge as we possess upon the difficult subjects of *Mycetoma* and *Paramycetoma*, with an especial view to the practical bearings of simple diagnosis and treatment, and, with regard to the latter, we have indicated the lines upon which we hope to work in the future.

KHARTOUM, March 14, 1917.

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ILLUSTRATIONS.

Nearly all of these illustrations are much improved if examined by means of an ordinary reading lens.

PLATE I.

- FIG. 1. *Mycetoma* of the foot, of the type named *Black Maduromycosis*. It shows several sinuses opening on the skin and in one of these openings a black grain can be seen. The cut surface depicts a mass of black grains which may with advantage be examined by means of a reading lens. Reduced about one-half. Photograph.
- FIG. 2. Yellow grain from a *Mycetoma* of the nature of a Yellow Actinomycosis. X 20 diameters. Photograph.
- FIG. 3. Black grain from a *Mycetoma* of the variety termed Black Maduromycosis. X 20 diameters. Photograph.
- FIG. 4. Red grain from a *Mycetoma* classified as a Red Actinomycosis. X 20 diameters. Photograph.
- FIG. 5. Black grains embedded in the tissues of a Black Maduromycosis from which there was no discharge. X 1.5 diameters. Photograph.
- FIG. 6. A portion of a hard Yellow grain from a White Maduromycosis softened in Caustic Soda, mounted in water and squashed between the slide and cover slip. Note the broad segmented hyphae and the one oval chlamydospore. X 375 diameters. Photomicrograph.
- FIG. 7. A portion of a soft Yellow grain from a Yellow (White) Actinomycosis treated as described in Fig. 6. Note the bacilliform hyphae which are the thin non-segmented Nocardial filaments so apt to be mistaken for bacilli. Note also the absence of chlamydospores. X 600 diameters. Photomicrograph.

- FIG. 8. Section of a grain from a Black Maduromycosis showing the absence of Aspergillar heads.
X 250 diameters. *Photomicrograph.*
- FIG. 9. *Nocardia convoluta*. Growth on potato showing buff colored growth and absence of pigmentation of the medium.
About natural size. *Photograph.*
- FIG. 10. The *Aleuriospore* form of the conidial type of spore.
X 800 diameters. *Photomicrograph.*
- FIG. 11. *Glenospora semoni* grown on clear maltose agar for 12 days in an uncapped tube at 30° C.
Natural size. *Photograph.*
- FIG. 12. *Glenospora khartoumensis* grown on the same media, at the same time and place, and under exactly similar conditions as Fig. 11.
Natural size. *Photograph.*
- FIG. 13. Characteristic aerobic growths of *N. convoluta* obtained direct from grains after being placed upon inspissated ox blood serum for 12 days. This illustrates the ease with which certain Nocardias can be grown direct from grains.
Natural size. *Photograph.*
- FIG. 14. Another characteristic growth of a Nocardial fungus in the form of puff balls in glucose peptone. The puff balls have the peculiar habit of clinging to a glass tube inserted into the medium and also on the damp glass of the test tube higher than the level of the liquid medium.
Natural size. *Photograph.*

PLATE II.

- FIG. 15. *Arthrospores* of *Nocardia convoluta*.
X 1,940 diameters. *Photomicrograph.*
- FIG. 16. Section of a grain of *Nocardia convoluta* showing the absence of clubs.
X 82 diameters. *Photomicrograph.*
- FIG. 17. Growth on Glucose Agar of the organism causing *Red Actinomycosis*.
Reduced. *Photograph.*
- FIG. 18. Section of a grain of *Nocardia bovis* showing the presence of clubs.
X 620 diameters. *Photomicrograph.*
- FIG. 19. Cellular exudate of a typical Mycetoma, Actinomycotic Division, showing giant cells, with and without fungal elements, plasma cells and lymphocytes.
X 140 diameters. *Photomicrograph.*
- FIG. 20. Small vein completely blocked by Nocardial filaments from a Paramycetoma.
X 550 diameters. *Photomicrograph.*
- FIG. 21. Paramycetoma of the face.
Reduced. *Photograph.*
- FIG. 22. Single *Eosinophile body* lying in a cell from a Paramycetoma.
X 750 diameters. *Photomicrograph.*
- FIG. 23. Separate and variously sized *Eosinophile bodies* from a Mycetoma.
X 1,440 diameters. *Photomicrograph.*
- FIG. 24. A cluster of Eosinophile bodies in a cell from a Paramycetoma.
Low magnification. *Photomicrograph.*

PLATE III.

- FIG. 25. Peculiar Nocardial grain from a Paramycetoma of the type of Paracinomycosis.
X 400 diameters. *Photomicrograph.*
- FIG. 26. Septate broad filament in a Paramycetoma of the type of Paramaduromycosis. There were giant cells in this specimen which somewhat resembled a myeloid sarcoma.
X 1,400 diameters. *Photomicrograph.*
- FIG. 27. Cellular exudate in a Paramycetoma. Note the plasma cells and lymphocytes.
X 450 diameters. *Photomicrograph.*
- FIG. 28. Commencing degeneration of the cellular exudate shown in Fig. 27.
X 450 diameters. *Photomicrograph.*
- FIG. 29. Periarteritis and Endarteritis in a vessel from a Mycetoma. Similar conditions can be seen in Paramycetoma.
X 400 diameters. *Photomicrograph.*
- FIG. 30. Juxta-articular nodules near the left elbow and knee in a Sudanese woman. The opposite elbow and knee were similarly affected.
Reduced. *Photograph.*

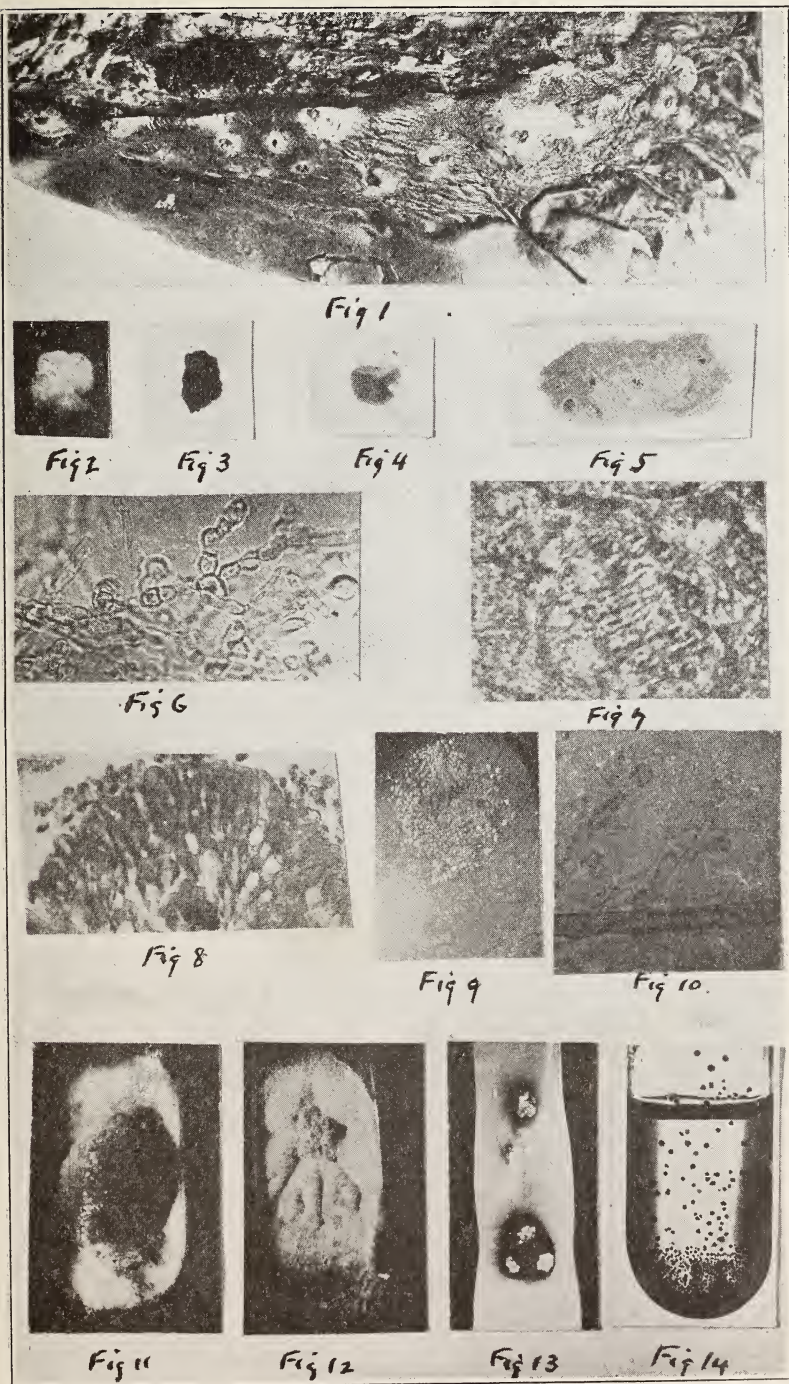


PLATE I.

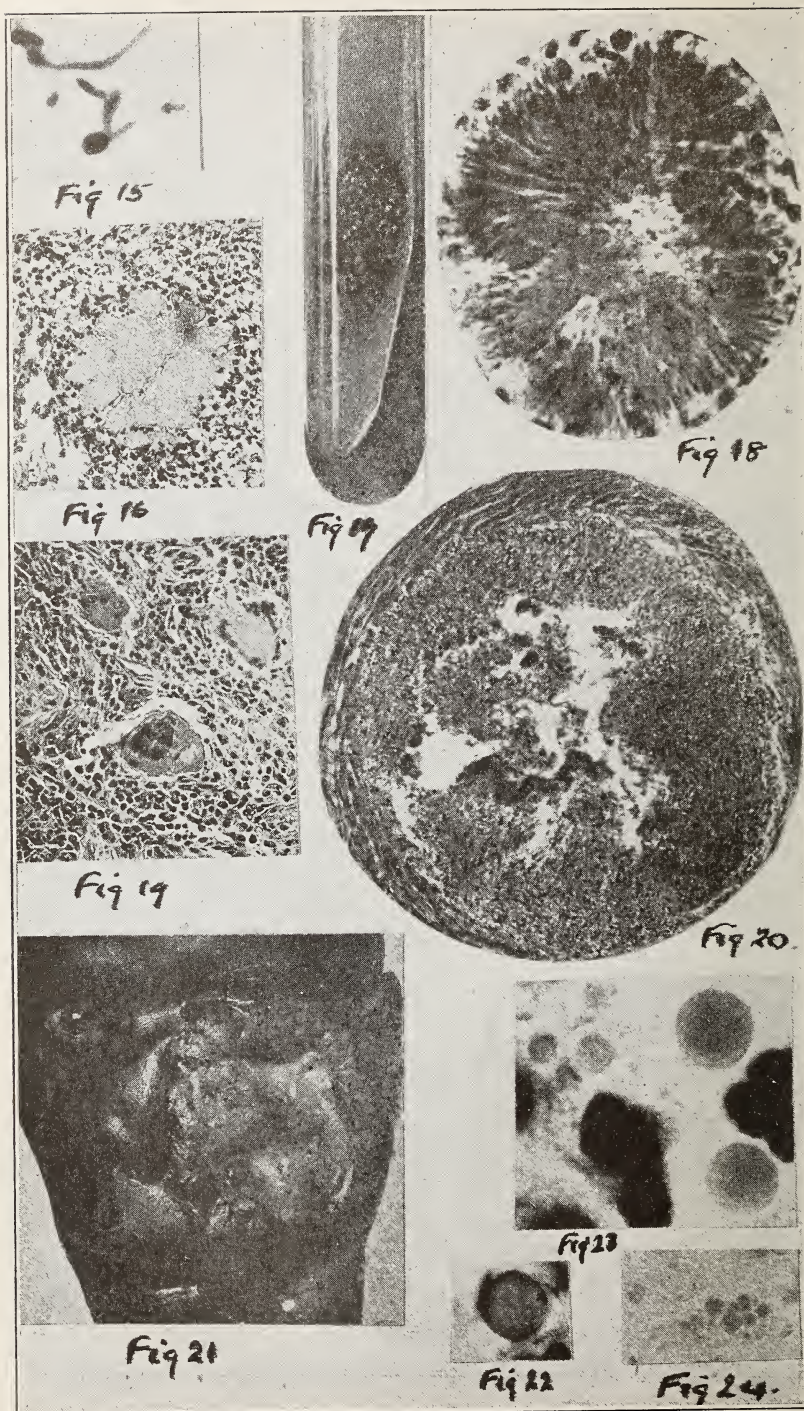




Fig 25



Fig 26

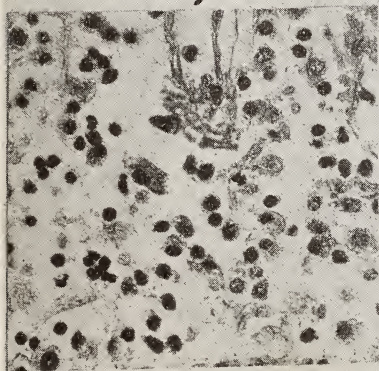


Fig 27

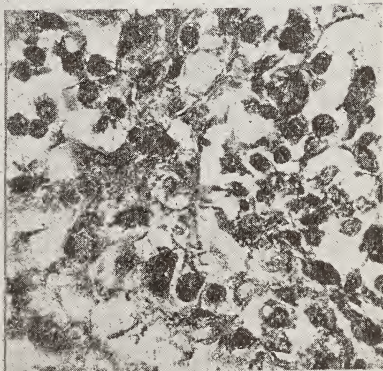


Fig 28

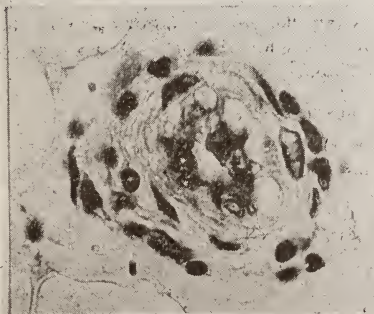


Fig 29



Fig 30

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

Edited by DR. L. R. DE BUYS, Secretary-Treasurer.

A REMINDER.

The membership of the Louisiana State Medical Society for 1917 is within eight of being one thousand. It is to be hoped that the eight additional members will be secured, in order to complete the "One Thousand Membership," which has been the goal to which we have been working for the past several years. Any assistance on the part of the members in securing these additional members will be greatly appreciated by the State Society. It will also be a credit to every member whose name appears on the membership roll for 1917 to have his name included in the largest membership roll in the history of the Society.

While we are nearing the end of the year it is pertinent to recall to our minds certain laws of the Society which have a direct bearing on each individual membership.

The following laws are, therefore, presented:

"FISCAL YEAR."

"The fiscal year of the Society shall begin January first."

CHAPTER IX. SECTION 2.

"Dues must be paid in advance."

CHAPTER IX. SECTION 3.

"Any District or Parish Society which fails to pay its assessments on or before the date above stated, shall be held as delinquent, and if not paid in thirty days thereafter shall be suspended."

CHAPTER IX. SECTION 4.

"Physicians in organized parishes with the proper qualifications can send their dues direct to the State Society when the Parish Society in which parish they reside becomes suspended."

CHAPTER XII. SECTION 10.

"In any organized parish in which there are ten or more members of the State Society, these members must effect organization or forfeit their membership in the State Society."

CHAPTER XII. SECTION 12.

"At some meeting in advance of the fiscal year of this Society each Parish Society shall elect a delegate or delegates, and alternate or alternates, to represent it in the House of Delegates of this Society, in the proportion of one delegate and alternate to each twenty-five members or fraction thereof, and the Secretary of the Society shall send a list of such delegates and alternates to the Secretary-Treasurer of this Society."

CHAPTER XIV. SECTION 8.

“Medical defense by the Society will not be available to those who are delinquent or to those who have not paid the annual dues of the Society prior to the rendering of services for which indemnity is asked.”

In explanation of the last law quoted, it means that if, on January 1, 1918, a member treated a case out of which a suit would come, and the said member's dues were *received by the State Society on January 2, 1918*, the State Medical Society could not, in accordance with its by-laws, give said member the protection of medical defense.

This also holds good for the JOURNAL. The January issue of the JOURNAL will be sent on January 1, 1918, to those members in good standing on January 1, 1918, namely: to those whose dues are received at the office of the State Society on or before January 1, 1918.

Let us, therefore, enjoy our membership and the benefits derived therefrom in the Louisiana State Medical Society for the 365 days of 1918, without any lapse either in membership or benefits.

NEWS AND COMMENT

HOSPITAL BEQUESTS.—Under the will of Mrs. Helen Cossitt Juilliard, the Lincoln Hospital and Home, New York, will receive \$100,000 and the New York Orthopedic Hospital \$50,000. One-fourth of the residue of her estate and \$100,000 are to go to St. John's Guild. These bequests are not to be paid until the death of Mr. Juilliard.

EXEMPTION OF MEDICAL STUDENTS.—A movement toward obtaining exemption for dental students in the same way that it has been granted to medical students has been begun, with the understanding that they shall become members of the reserve and subject to call.

MILITARY SURGEONS CHOOSE OFFICERS.—At the annual meeting of the Association of Military Surgeons, held in Fort Benjamin Harrison, Indiana, October 9, Dr. George A. Lung, medical director of the United States Navy, was elected president; Colonel Edward Munson was elected to his third term as secretary, and Assistant Surgeon-General W. Colby Rucker, of the United States Public Health Service, was named treasurer.

COMMENDS BRAVERY OF AMERICAN SURGEONS.—The Associated Press recently received a cablegram from the British front in France and Belgium, praising the American surgeons in the advanced casualty clearing stations. According to report, several surgeons and assistants worked steadily at Ypres-Menin while shells were breaking about them. Those who witnessed the scene report that a greater demonstration of coolness had never been seen than that shown by these men.

HEREDITY AND CANCER.—A committee of life insurance companies, coöperating with the American Society for the Control of Cancer in a recent investigation, found from the records of a large life insurance company that, among 20,000 applicants for life insurance whose parents had both died of cancer, only four had cancer. Out of 492 instances in which one or both parents had died of cancer, 42 per cent had died of some other disease, 56 per cent were living at the average of 61, and less than one per cent—four out of 492—had died from cancer.

THE SOUTHERN GASTRO-ENTEROLOGICAL ASSOCIATION will hold its next meeting in Memphis, Tenn., November 12, 1917. A cordial invitation is extended to the profession to attend the meeting. For further information, write to the secretary, Dr. Marvin H. Smith, 459 St. James Building, Jacksonville, Fla.

SOUTHERN TUBERCULOSIS CONGRESS.—The National Association for the Study and Prevention of Tuberculosis will hold a Southern tuberculosis conference in Chattanooga, Tenn., November 9 and 10, 1917.

DENTAL SURGEONS ORGANIZE.—The Association of Military Dental Surgeons of the United States has been organized, with offices in San Francisco. Dr. John D. Milliken is president of the association, which publishes a quarterly bulletin of dento-military news.

CARREL HOSPITAL OPEN.—The Carrel Hospital, on the grounds of the Rockefeller Institute, New York, was recently opened. This hospital will train United States army and navy surgeons in the technic of the use of the Dakin-Carrel solution for infected wounds.

SCARCITY OF RUBBER GLOVES IN ENGLAND.—Unless the United States is allowed to send larger supplies, the shortage of rubber operating gloves in England is likely to result very seriously. The Board of Trade has restricted the importation and the army and navy have been supplied under special license. The British Med-

ical Association has made an appeal to the Board of Trade to allow the civil hospitals to get supplies from the United States.

THE AMERICAN ASSOCIATION OF CLINICAL RESEARCH elected at its recent meeting in Boston the following officers for the ensuing year: President, Dr. Marshall W. McDuffie, New York; first vice-president, Dr. Roger M. Griswold, Kensington, Conn.; second vice-president, Dr. Joseph A. Weitz, Montpelier, Ohio; secretary-treasurer, Dr. James Krauss, Boston. The next annual meeting of the association will be held in New York, in October, 1918.

THE ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA, amounting to about \$250, will be made on July 14, 1918, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays may be upon any subject in medicine, but cannot have been published. They must be typewritten, and, if written in another language, should be accompanied by an English translation, and must be received by the secretary of the college by May 1, 1918. Essays must be sent without signature, but plainly marked with a motto and be accompanied by a sealed envelope, the motto of the paper outside and the name and address of the author within. It is a condition that the successful essay shall remain in possession of the college; other essays will be returned upon application. The Alvarenga prize for 1917 has been awarded to Dr. Wilburt C. Davison, Baltimore, for his essay entitled "The Superiority of Inoculations with Mixed Triple Vaccin Over Successive Inoculations with the Single Vaccins." Francis R. Packard is secretary, 19 South Twenty-second street, Philadelphia.

PERSONALS.—Dr. Rupert M. Blakely, of New Orleans, is now serving in the Medical Reserve Corps.

Dr. Isadore Dyer, Dean of the School of Medicine, Tulane University, attended the meetings of the National Board of Medical Examiners and of the Chairmen, Medical Section, Committee of National Safety, which were held in Chicago during the past month.

REMOVALS.—Dr. Peyton Randolph, from 520 Exchange Building, Memphis, Tenn, to Georgetown, Texas.

Dr. S. B. Matthews, from Urania to Alexandria, La.

Dr. W. A. Love has moved his office to the Cusachs Building.

MARRIAGES.—On September 22, 1917, Lieutenant Newton W.

Sentell, graduate of Tulane School of Medicine in 1914, to Miss Elizabeth Praeger, of Alexandria, La.

On October 18, 1917, Dr. Joseph Grover Mitchell to Miss Maude Henderson, of Junction City, Ark.

DIED.—On October 10, 1917, Dr. Henry P. Lingo, of Clinton, La.

BOOK REVIEWS AND NOTICES

All new publications sent to the JOURNAL will be appreciated and will invariably be promptly acknowledged under the heading of "Publications Received." While it will be the aim of the JOURNAL to review as many of the works accepted as possible, the editors will be guided by the space available and the merit of respective publications. The acceptance of a book implies no obligation to review.

Manual of the Diseases of the Eye, for Students and General Practitioners, by Charles H. May, M. D. Ninth edition, revised. Wm. Wood & Co., New York, 1917.

This deservedly popular textbook for students and general practitioners has now reached its ninth American edition. It has always been intended for such readers, who need to know the essentials of ophthalmology. With this end in view, the author encountered the usual difficulty of saying enough without saying too much. It is easy to write a bulky volume, laden with controversial matter and rare and useless cases; the trouble lies in selecting just that part of an abundant store of material that will supply the needs of a given audience without embarrassing the reader with unavailable knowledge. Dr. May has accomplished this feat in a very gratifying manner, as is shown by the large number of editions of foreign translations of his work since 1900, as follows: Two German, three Italian, four British, three French, three Dutch, four Spanish, two Japanese, and one Chinese.

In preparing this latest edition, the author has carefully revised every part of it, and all alterations and additions have been incorporated that were necessary to bring the work abreast of the most recent developments in ophthalmology.

McSHANE.

Pharmacology and Therapeutics, by Horatio C. Wood, Jr., M. D. Second edition. J. B. Lippincott Company, Philadelphia and London.

This necessary revision of a standard text on pharmacology and therapeutics presents the contents in the same classification as its predecessor, grouping drugs which are related in their physiological action and, at the same time, the pharmacology and therapeutic uses of the drugs are presented.

A number of new remedies are discussed in this new edition, which conforms, in the main, to the arrangement and text of its predecessor.

As a reference or as a text, this book must remain one of those among the accepted authorities.

DYER.

Histology of Medicinal Plants, by William Mansfield, A. M., Phar. D.
John Wiley & Sons, New York.

The long experience of the author as a teacher in the College of Pharmacy of Columbia University makes his field particularly certain and of interest. While the material offered is not of great extent, its content is excellent and the illustrations are definitely of service to the student of analytical botany. This is especially true where the interest lies in the systematic study of medicinal plants. The book should be of value just now, when a growing interest in the cultivation of medicinal plants is being evidenced in the United States. DYER.

Cancer: Its Cause and Treatment, by L. D. Bulkley, M. D. Published
by Paul Hoeber, New York.

This volume of 282 pages is the second book on this subject by this author and is drawn from thirty years' experience in private practice and in the clinic of the New York Skin and Cancer Hospital.

It is most interesting and instructive, dealing entirely with the medical aspect of this great scourge, and for that reason is of interest alike to the surgeon and physician.

This volume is very refreshing in dealing with this great disease, when, in this most active surgical period, the death rate has risen from sixty to over eighty per hundred thousand in the last fifteen years. Statistics show that 90 per cent of all afflicted with cancer ultimately die a cancer death. Surgery, for that reason, is indicted as having failed to cure or control its ravages.

The increase of cancer has been proportionate to heart disease, nephritis and apoplexy, which have all risen about 20 per cent in the last fifteen years; while tuberculosis, under proper hygiene and dietetic handling, has fallen off 50 per cent.

After the review of many facts, the conclusion is drawn that a dyscrasia of the blood and tissues, the results of faulty diet and hygiene, are at the bottom of the trouble. Bulkley regards the consumption of animal protein as a source of this derangement of metabolism, which permits and favors, if it does not actually cause, the development of cancer. Coffee and alcohol are also incriminated, and these facts are brought out in a rather convincing way, supported by case reports in which many cured cases are shown.

The frequent relation between cancer and rheumatism also seems proven. It is recognized that obesity results from some nutritive derangement and that cancer is practically incurable in these subjects. Also, in diabetes, a nutritive disorder, cancer is very frequent. Deranged, disturbed, perverted metabolism is at the bottom of all erroneous growth, whether it be obesity or a benign or malignant growth.

The study of the urine and blood is particularly interesting. The urine is usually acid and deficient in volume and total solids eliminated.

In a study of the cases treated, constant records are kept of both blood and urine, and any improvement in the patient's condition is coincident with a return of both to normal brought about by medical means. This, with the avoidance of all animal protein, is the basis of treatment.

While the author does not recommend surgical treatment, the advisability of the combination of medical with surgical measures is in-

timated. This book is well worth the careful attention of the entire profession.

CARROLL W. ALLEN.

Eye, Ear, Nose and Throat. A Manual for Students and Practitioners, by Howard Charles Ballenger, M. D., and A. G. Wipperfurth, M. D. New, second edition, thoroughly revised. Lea & Febiger, Philadelphia and New York, 1917.

This is a handy manual for the use of students and general practitioners. The subjects are considered chiefly in their practical aspects. The information it contains is stated concisely, but not too much so to be of any use. Controversial matter is put aside. The authors have chosen their material wisely, which we would expect from men whose work as teachers gives them an insight into the needs of those for whom the book is written. The call for a second edition indicates that it has met with a cordial reception by those for whom it was intended.

McSHANE.

Textbook of Ophthalmology, by Hofrat Ernst Fuchs, Professor of Ophthalmology in the University of Vienna. Authorized translation from the twelfth German edition. Completely revised and reset, with numerous additions specially supplied by the author, and otherwise much enlarged. By Alexander Duane, M. D., Surgeon Emeritus, Knapp Memorial Hospital, New York. 462 illustrations. Fifth edition. J. B. Lippincott Company, Philadelphia and London.

Fuchs' textbook has been at the forefront of ophthalmological literature ever since it was first given to the world. Successive editions added all that was valuable in ophthalmology, and thus the book was always a faithful reflex of the science at the time of its publication. No oculist's library is complete without a copy of Fuchs' work. For twenty-seven years this book has been the standard in ophthalmology. On the literary side, it is so well written that the effort to learn is greatly diminished.

War may interfere with many things, but science does not bow down to Mars. Though no new German edition is contemplated, the translator, Dr. Duane undertook to make additions rendered necessary by recent progress, and he also incorporated new material furnished by the author himself. In this way the present edition is a new work. Alterations in the arrangement of the text have also been made, which increase its value as a work of reference.

It is impossible to give an analysis of this great work, for even a brief analysis would have to cover the entire field of ophthalmology.

Fuchs' book is encyclopedic in character, and anything pertaining to ophthalmic science that is not found there either cannot be found elsewhere or else is a negligible quantity.

The last section (on operations) is large enough to constitute a separate work in itself. Dr. Duane has here contributed materially to the text, and in all sections the able hand of the translator has striven to maintain the high standard of excellence that has always been the chief characteristic of Fuchs' work.

McSHANE.

PUBLICATIONS RECEIVED

LEA & FEBIGER, Philadelphia and New York.

A Treatise on Orthopedic Surgery, by Royal Whitman, M. D., M. R. C. S., F. A. C. S. Fifth edition, revised and enlarged.

Progressive Medicine. Edited by Hobart Amory Hare, M. D., assisted by Leighton F. Appleman, M. D. September 1, 1917.

C. V. MOSBY COMPANY, St. Louis, 1917.

Diseases of the Skin, by Richard L. Sutton, M. D. Second edition, revised and enlarged.

The Prescription, by Otto A. Wall, Ph. G., M. D. Fourth and revised edition.

W. B. SAUNDERS COMPANY, Philadelphia and London, 1917.

The Surgical Clinics of Chicago. Vol. 1, No. 4. August, 1917.

THE MACMILLAN COMPANY, New York, 1917.

Clinical Cardiology, by Selian Neuhof, B. S., M. D.

WASHINGTON GOVERNMENT PRINTING OFFICE, Washington, D. C., 1917.

Public Health Reports. Vol. 32, Nos. 36, 37, 38 and 39.

Common Colds, by W. C. Rucker.

MISCELLANEOUS.

The Conversion of Hamilton Wheeler, by Prescott Locket. (The Pandect Publishing Company, Bloomington, Ill., 1917.)

Fortieth Annual Report of the Department of Health of the State of New Jersey, 1916. (State Gazette Publishing Company, Trenton, N. J., 1917.)

International Health Board. The Rockefeller Foundation. Third Annual Report. (61 Broadway, New York, 1917.)

The Work in Europe of the American Red Cross. (American Red Cross, Washington, D. C.)

China Medical Board. Second Annual Report. (61 Broadway, New York, 1917.)

Monthly Bulletin of the Department of Health, City of New York.

Mortality of Negro Babies in New York City, by Jacob Sobel, M. D. (Department of Health, City of New York.)

A Milk-Borne Outbreak of Typhoid Fever on Staten Island. (Department of Health, City of New York.)

REPRINTS.

The Teaching of Protozoology to Medical Students, by Frank G. Haughwout.

Resultados Obtenidos Con la Prueba de la Phenolsulphonthalein, by Dr. Juan Iturbe.

The Established Value of Radium as a Therapeutic Agent, by Dr. W. H. B. Aikins.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for September, 1917.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	6	2	8
Intermittent Fever (Malarial Cachexia)	2	1	3
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough		2	2
Diphtheria and Croup			
Influenza	1	1	2
Cholera Nostras			
Pyemia and Septicemia			
Tuberculosis	39	39	78
Cancer	19	6	25
Rheumatism and Gout	3	1	4
Diabetes		1	1
Alcoholism	1		1
Encephalitis and Meningitis	1		1
Locomotor Ataxia			
Congestion, Hemorrhage and Softening of Brain	20	15	35
Paralysis	2	2	4
Convulsions of Infancy			
Other Diseases of Infancy	13	11	24
Tetanus		5	5
Other Nervous Diseases	6		6
Heart Diseases	53	42	95
Bronchitis		2	2
Pneumonia and Broncho-Pneumonia	13	12	25
Other Respiratory Diseases	2	2	4
Ulcer of Stomach			
Other Diseases of the Stomach	2	1	3
Diarrhea, Dysentery and Enteritis	18	13	31
Hernia, Intestinal Obstruction	3	2	5
Cirrhosis of Liver	4	4	8
Other Diseases of the Liver	4	1	5
Simple Peritonitis			
Appendicitis	2	2	4
Bright's Disease	15	15	30
Other Genito-Urinary Diseases	10	10	20
Puerperal Diseases	2	2	4
Senile Debility	3	1	4
Suicide	7		7
Injuries	21	19	40
All Other Causes	16	13	29
TOTAL	288	227	515

Still-born Children—White, 24; colored, 31; total, 55.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1000 per Annum for Month—White, 12.52; colored, 26.70; total, 16.34. Non-residents excluded, 13.84.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure. 29.98
Mean temperature 78.
Total precipitation. 2.69 inches
Prevailing direction of wind, northeast.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITORS:

CHARLES CHASSAIGNAC, M. D.

ISADORE DYER, M. D.

COLLABORATORS:

C. C. BASS, M. D., Prest., Amer. Soc. of Tropical Medicine..... }
JOHN M. SWAN, M. D., Secty. American Soc. of Tropical Medicine..... } *Ex Officio*
L. R. DE BUYS, M. D., Secretary Louisiana State Medical Society..... } *Ex-Officio*.
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AUGUSTUS McSHANE, M. D., Greenwood, Miss.
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J. A. STORCK, M. D., Tulane University of Louisiana.
R. P. STRONG, M. D., Harvard University.
ROY M. VAN WART, M. D., Tulane University of Louisiana.

Vol. LXX

DECEMBER, 1917

No. 6

EDITORIAL

FIVE MILLION MEN UNDER ARMS.

With the tide at the full and with the unrest of Russia, the uncertainty in Italy and the heroes of Britain, Belgium, Roumania, Servia and glorious France at the throats of the Central Powers, our duty seems plain—but mere effort will not suffice.

Our armaments are on the way—every resource is developing to its fullest efficiency, but the thing that is to count is the man power to make the resources available. At least five million men must be ready, soon.

The medical profession has responded well, but not to its capacity. Small excuse has been needed for some to falter and to fall back waiting for some more personal argument.

Every man is needed now. With five million men, there must be fifty thousand medical officers and there are less than seventeen thousand commissioned to-day, including the regular Medical Corps, the Medical Reserve Corps and the Medical officers of the National Guard.

It is the business of the medical profession itself to see to it that every man who can be spared should soon fall in line for service. Great Britain had 30,000 doctors when war came; 10,000 of these are in the army to-day.

The Medical Department of the army is busy with many things and it cannot develop all the patriotism and all the enthusiasm. The rank and file of the medical profession must help. Count the men who can and who should go from your own community. Put upon yourself or your neighbor, if he is more fit, the burden of service and the honor of it and bid him go, but do not stop to argue its necessity. *That time has passed.*

Peace is a long way off—the long roll will not be called for many months to come and every community must pay the toll, over and over before all is done. No miracle can stop the machinery of war and there can be no use in waiting for it to go by. We must move along with it, to the end.

We are at war—all of these United States and all of us who have red blood in us must feel the sway of its demands and we must answer with the best service we know. Tomorrow the sorrow of it all may come nearer home, but by advancing to meet the evil on the way we may the sooner drive it on to its own destruction.

MEMBERSHIP ONE THOUSAND.

In another column the secretary of the Louisiana State Medical Society presents the joyful announcement that the society has reached the thousand mark. While on paper it has already been numerically as strong, the society has never had a thousand full-paid, active, interested members; the society, through its energetic officers who have accomplished the result, must be congratulated therefor.

Must we stop at this? Never! This point merely marks a milestone, registers an advance towards another objective which should

from hence be fifteen hundred. The same energy and perservance on the part of the officers and members will just as surely get there as we now have reached our present objective.

The advantages of membership in the society are so great and have frequently been brought out, and forcibly, by the society, hence we need not reiterate them at this time, but we must say to our Louisiana readers who are not already members of the state society that they can not afford to stay out. Let them think it over.

UNIVERSAL MILITARY TRAINING.

The physician is essentially pacific, as his mission is primarily to conserve human life.

This, however, does not make him a pacifist in the sense of the present use of the word, for the upholding of democratic principles and true liberty must in the end yield happier existence, greater progress, and longer lives, even if won at the price of sacrifice of life and treasure by this generation.

If he reflects, it will make him favor a conservative form of universal training: ultimately, because preparedness means prevention of war and saving of human life; presently, because training for our young men means physical improvement, broadened vision and the bringing of the classes to a better understanding of the problems of each.

Does any one who reflects think that France could have done what she has done and fought as she has fought if she had not had universal military training?

The question answers itself and of itself should make medical men favor universal military training for this country and champions, *as experts*, of the Chamberlain Bill providing for it.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

THE TREATMENT OF TYPHOID FEVER.*

By LUCIEN F. SALOMON, M. D., New Orleans.

In 1903 I read and published a paper upon the treatment of typhoid fever.

An article by Warren Coleman, M. D. of New York published in *Journal of the American Medical Association* for August 4, 1917 prompts me to reiterate and emphasize much of what I then had to say, and also to comment upon Dr. Coleman's paper and stress the difference between his results and mine.

It will be remembered by those who heard or read my paper, published in the N. O. MEDICAL AND SURGICAL JOURNAL, that I laid particular stress upon the cardinal principle in the treatment of typhoid fever, viz: *intestinal rest*, and the influence of arsenite of copper in controlling the disease.

My records show 186 cases without a death, without tympanites, without hemorrhage, and without complication of any kind. In fact in all cases within 72 hours after beginning treatment the temperature begins to decline and defervescence gradually takes place until normal is reached from the 12th to 14th day.

Dr. Coleman compares his cases upon a high calory diet with cases upon a milk diet, which, to my way of thinking, is unfair because I cannot believe that anyone who has had experience with milk as an article of diet in typhoid fever would continue to use it when it not only prolongs the duration of the disease, but undoubtedly causes tympanites, increases the tendency to ulceration, and frequently results in hemorrhage.

The duration of the febrile period and range of temperature are not affected by the high calory diet alone, and while it is the generally accepted opinion that medication has no influence upon the disease, it is this latter point mainly that I desire to deny and to show that the use of arsenite of copper does have a decidedly

* Read before the Orleans Parish Medical Society, October 8, 1917. [Received for publication November 10, 1917.—Eds.]

beneficial effect, and while in Dr. Coleman's cases he has the satisfaction of knowing that his patients have not lost and in some instances have even gained in weight, that satisfaction is offset by the duration of the illness and of the complications which occurred.

According to his statement, tympanites occurred in 17.6 per cent. diarrhea in 16.2 per cent, 7.65 per cent were delirious thru the greater part of the active period and 13.5 per cent were delirious from one to several nights; and intestinal hemorrhage occurred in 9.45 per cent. In 0.9 per cent perforation occurred. Relapses occurred in 6.75 per cent.

The mortality was 8.10 per cent, which is rather high when compared with the average death rate from typhoid fever, even under the old "expectant" plan of treatment. In fact, if I remember correctly while on a visit to Porto Rico at about the termination of the Spanish American war when I saw 540 cases in the military hospital at Ponce, I was informed by the surgeons in charge that the mortality was 7.5 per cent.

Clinical Picture. While the history of typhoid fever heretofore has shown the febrile course to be attended with delirium, stupor (the so-called typhoid state), tympanites, diarrhea and various nervous phenomena, in my cases the patients are never delirious, have no diarrhea, or even nervous symptoms, and lie in bed at ease, and in the large majority of cases express themselves as feeling that that there is nothing the matter with them. They do not feel ill and are always bright of intellect and often cheerful, lie upon either side and are perfectly comfortable.

With these few preliminary remarks it is only necessary to say that the treatment of typhoid fever is so simple and easy as to require very little attention on the part of the nurse, for as nurses have again and again said to me they have so little to do that they would rather nurse a case of typhoid fever for me than anything else, as their duties are practically negligible and they are not constantly at work.

Given a case of typhoid fever seen early in the course of the disease, the treatment consists first in cleaning out the intestinal tract by a brisk saline purgative, the reason for which is obvious. After that the administration of arsenite of copper, 1/100 to 1/50 grain, every three hours, a saline enema daily, and a readily assimilable liquid diet of which I shall speak later.

The condition in typhoid fever might be stated to be a double culmination of general sepsis or toxemia, and a local traumatism in the intestinal canal; that is, the always present inflammation of Peyer's patches, which latter is always the source of the complication so often met with—ulceration, diarrhea, and hemorrhage.

In the use of arsenite of copper I believe, and it is furthermore my firm conviction, based upon a large experience and long observation, that we possess an agent which effectually combats the combined conditions above mentioned.

The action of the drug is two-fold.

As I stated in my previous article on this subject, the combination of arsenic and copper makes a powerful germicide and antiseptic. When administered to a patient with typhoid fever it appears to have, and I am firmly convinced does have, a direct influence upon and destroys the toxins generated by the typhoid bacillus, and in addition to its general systemic effect has a direct local action upon the inflamed acuminated glands, because the being absorbed it is eliminated thru the intestinal wall and thus has a direct effect upon the local diseased condition.

The charts which I present will show the beneficial effects of the arsenite of copper, which in my experience have been so uniform that there is no room to doubt that it is the agent which modifies the course of the disease.

I do not give detailed histories of individual cases because in all my cases the histories have been uneventful, being but a simple record of improvement and gradual decline of temperature.

In all cases, with rare exception, within seventy-two hours after beginning treatment its effects will be manifested. No matter how high the temperature at the beginning, at the end of the time specified there will be a decided drop in temperature which will continue following the regular temperature curve of typhoid fever until about the eighth day when the daily temperature will grow progressively less and complete subsidence will occur about the twelfth or fourteenth day. It is hardly necessary to go into details of this gradual decline, but a careful observation will enable one to tell almost to the day when the temperature will become normal.

Frequently after reaching normal the temperature will for two or three mornings be subnormal, and incidently I might say that

in such conditions you will find caffein to be the best stimulant until such time as the patient may begin to take larger amounts of carbohydrates when a normal temperature will be maintained. I do not allow meat until a week or ten days after normal temperature has been reached, and consequently do not have relapses.

Now, as to the administration of the drug under consideration:

This is a matter deserving of careful attention, because altho apparently a simple matter I have often had difficulty in having pharmacists prepare it as directed.

I do not use tablets or tablet triturates as commonly found in stock in drug stores for obvious reasons. To insure results I determined to use the pure salt, and have never failed in attaining good results by using Merck's pure arsenite of copper suspended in distilled water. The directions for preparing are that it shall be well triturated in a mortar before adding water. It will then be found that the finely triturated salt when mixed with the water will be in the form of a flocculent deposit, which upon shaking the bottle will remain in suspension long enough to be susceptible of equal division and accurate dosage. One half grain to six ounces of distilled water will give to each teaspoonful approximately one one-hundredth of a grain ($1/96$). This is administered every three hours.

Of course, the administration of the arsenite of copper, while modifying and shortening the course of the disease, does not constitute the only treatment.

While it is the agent which removes the cause, there are other details which are almost as essential and which require as much if not more care than the administration of the drug. In other words, the proper management of each individual case is necessary and will do much towards securing a rapid and favorable termination of the case.

Daily flushing of the colon with a saline enema is essential and materially assists in recovery. Purgatives by mouth are condemned. A word about temperature. Do not let it worry you. I have had cases at the beginning with temperatures as high as 105° , but relied always upon the results of the arsenite of copper and have never been disappointed. Under no circumstances give the so-called antipyretics, as they are always depressing and do more harm than good. A temperature varying between 103° and 104° for two or

three days will do no particular harm, but should it be deemed necessary to attempt a reduction and make the patient more comfortable and the relatives more contented, sponging with tepid water and alcohol will generally secure the desired results.

However, I always keep an ice cap to the head. Under no circumstances do I allow ice applied to the abdomen.

If at any time a heart stimulant is thought advisable give digitalis and not strychnin as is often done (strychnin is *not* a heart stimulant). However, as a general tonic in the later stages or during convalescence it may be given.

As to diet. As mentioned at the beginning of this article the one great desideratum, owing to the inflammation of Peyer's patches, is intestinal rest, and this can only be obtained by giving such food as leaves the least amount of residue to pass over and irritate an already inflamed surface.

The diet is confined exclusively to liquid peptonoids (one ounce every 2 hours), containing protein, lactose, dextrine, and cane sugar, each ounce of which equals 62.1 calories, the whites of three or four eggs daily, given in orange juice, grape juice if agreeable to the patient, and water, preferably carbonated, *ad libitum*. I sometimes vary this with panopeton, or Hart's alimentary elixir, if more agreeable to the patient. The patient thus gets food in 24 hours of a caloric value of about 1000, which is amply sustaining.

I have confined myself so far to the treatment of cases which I had at first hand, but I have been called in consultation and have seen cases which did not present as clear and pleasant a clinical picture—cases with tympanites, delirium, ulceration, and hemorrhage.

However, in every instance shortly after a change of treatment to the method herein indicated improvement began and the cases went on to recovery.

The management of such cases calls for much and varied treatment which is not contemplated in the purpose of this paper, because if the method of treatment as here indicated were pursued such complications would not occur, and it is for the purpose of endeavoring to prevent them that this is written.

To conclude. There is an old saying that "a prophet is not without honor save in his own country."

I have written and talked upon this subject and have demonstrated to several physicians in New Orleans its success, but for some incomprehensible reason, which it is difficult to fathom, the profession in this city has refused to accept or have ignored it.

In contradistinction to this attitude I shall end by quoting from letters received from elsewhere.

From Geo. T. Moore, in charge of Laboratory of Plant Industry, U. S. Department of Agriculture:

"I was very much interested in learning of your success in the use of arsenite of copper for the cure of typhoid fever. You should certainly have all the credit and I am surprised that it has not been used to a greater extent."

Mr. A. P. Brantley, of Blackshear, Georgia, after having written to me and having his son, who was desperately ill, treated according to my method, and recovered, writes as follows:

"I showed our local physician here your letter, and he became interested in the arsenite of copper treatment for typhoid fever. At the time I showed him your letter he had two cases of typhoid fever, which had progressed to the stage of ulceration of the intestines. I had on hand some arsenite of copper, which I gave to him, and he immediately began the use of it. Both cases promptly convalesced. He has since had three cases, all of whom recovered."

A physician, formerly a resident of New Orleans, writing of my method of treatment stated that in two cases with intestinal hemorrhage both rapidly recovered without any further untoward symptoms. A few physicians who had followed the treatment in all its details have spoken to me in glowing terms of the results, and I only ask that others will at least give it a trial when I am sure that it will be agreed that it is the most rational, as well as the most successful method of treating typhoid fever.

DISCUSSION.

Dr. Joseph Holt: On a previous occasion Dr. Salomon kindly explained to me his manner of treatment for typhoid, which I have followed in many cases as most rational in clearness of intention, simplicity in application, unobjectionable to the patient and with uniformly excellent results.

During the active period, in teaspoonful doses, a carefully triturated but not strained aqueous suspension of the ninety-sixth of a grain of the arsenite of copper, every three hours; using in the mixture just enough tragacanth or gumarabic to insure a brief suspension upon shaking; the avoidance of milk in any form or other animal diet where there is a possibility of putrefacting change. Intestinal antiseptics is the secret of success in this disease. Nourishing with liquid beef peptonoids or panopepton, a tablespoonful in water, as agreeable, every three hours; the bowels gently opened daily by a flushing enema or, if need be, a mild laxative.

Under this regimen the patient never exhibits such clinical phenomena as tympanites, hypertonicity of abdominal muscles, parched, glazed tongue, hiccough, subsultus, persistent delirium, the tache meningeale or other sign of impending hemorrhage, heretofore accepted as diagnostic symptoms, rather than evidences of faulty management, often fail.

The specific ulceration of the intestinal glands demands treatment according to surgical principles in drainage and rest—not severe purgation, but simply drainage. This will relieve tympanites and mitigate all other effects of toxemia.

Dr. Salomon: (In closing) I wish to thank Dr. Eustis and Dr. Holt for their kind discussions. I wish to explain to all who wish to use this method of treatment, that merely giving arsenite of copper does not constitute the whole plan of treatment for typhoid fever (recite a case where the doctor in attendance of a case of typhoid simply giving this drug, thought that he was carrying out Dr. Salomon's plan of treatment, where upon the patient doing very badly, he sent for Dr. Salomon in consultation, who advised the doctor that he had not followed the form of treatment by simply giving the arsenite). Adhering to a proper form of diet with rectal flushing (with salt solution) is an essential part of the treatment. In regard to the prescription of arsenite of copper, instruct the druggist to triturate the drug well before mixing it with distilled water. It is not very hard to compound if properly done. I follow the plan of having one druggist in this city to fill this prescription, in order that same may be properly prepared. I think there is no objection to using this drug in the form of capsule, as suggested by Dr. Eustis but have always procured excellent results in the liquid form when prepared as described in my paper.

CRIPPLES WHO SHOULD NOT BE.*

By JAMES T. NIX, JR., M. D., New Orleans.

This paper is intended especially for those developmental or acquired conditions which, when not properly treated, gradually, progressively, and entirely invalidate the healthy child or sturdy adult. Some over-looked focal infection, systemic disease or constitutional derangement with unbridled destructive force predilects, attacks, and partially or totally disqualifies the ambulatory machine.

Let every doctor review his acquaintances and he will recall one or many cripples who, tho once in apparent perfect health, are now useless citizens, hopelessly invalid, pitiously infirm. They have consulted the best physicians and faithfully executed their highly intelligent recommendations, but to no avail. After years of suf-

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fering, with no relief, clearly and distinctly the inevitable state of life-long invalidism looms foremost on their horizon.

In desperation, as a last resort, they turn from ethics to charlatanism, exhaust the long list of patent remedies, scour the secret recesses for magic Indian herbs, revive the grand-mother's formulae, but the trial of each simply adds greater disappointment to the last. Cure is apparently impossible, and the most to be expected is a little comfort.

In many such cases, the diagnosis of symptoms, undiscovered etiology, misapplied or misdirected therapy are the responsible factors, and if recognized and successfully met may produce the most amazing results. A careful, searching analysis should be made, and the obscure cause, no matter how seemingly irrelevant or disconnected should be vigorously attacked. As a reward, in surprising proportion these given-up-unfortunates may be made useful members of society.

Remember that just as well as lues and gonorrhea may affect the joints, so also may the poisons and infection resulting from an infected sinus, disturbing appendix, bad tooth or small pus accumulation anywhere. Under such conditions, treatment of the arthritis, without removing the cause, is not only worthless, but aggravating to the malady.

REPORT OF CASES.

First Case. Milton McDonnel, 16 years old.

Family history: No similar condition on either parental side.

Previous history: Until the age of eight years the child had perfect health. In 1909 he fell ten feet from the limb of a cherry tree and landed on the ground in the sitting position. He was confined to bed for one week, after which the child seemed to get about as well as before. One month later however he developed typhoid fever which was very severe, lasting eight weeks, and followed immediately, before complete convalescence, by rheumatic pains in the right ankle and knee which represents the initial apparance of the present malady.

From this time on arthritic changes of pain, swelling, and fixation have included joint by joint all articular surfaces, showing no predilection for any locality but being general, involving the extremities together with the entire vertebral column. Until one year ago the child had travelled extensively in quest of a cure, moving to different climates and visiting all the large northern and eastern orthopedic clinics, according to physicians' advices.

He came to New Orleans in the early part of 1916 and was admitted to a clinical service in the Charity Hospital. All of the various internal remedies were administered but as the child made no progress, he was

transferred to an orthopedic service, where he remained for several months, but no curative lines of treatment were attempted, and the boy was transferred back to a medical service.

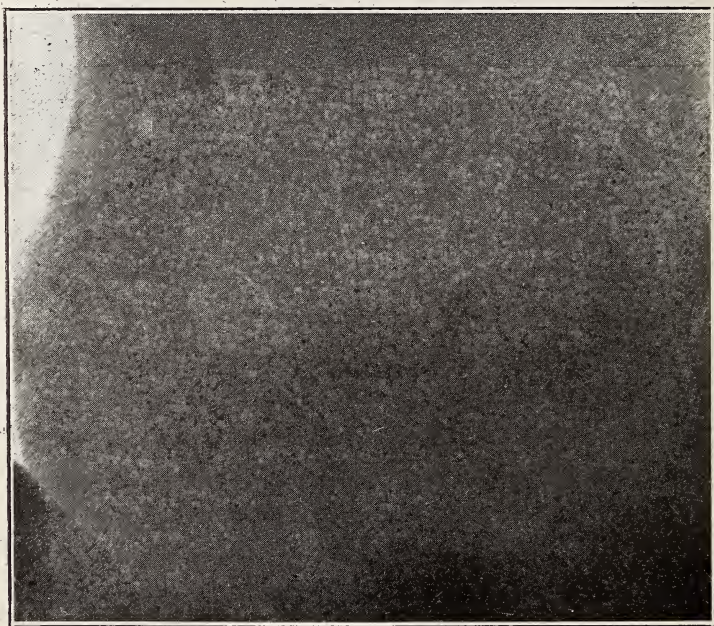
Child first seen by me in November, 1916, and on calling my attention to the case the interne remarked: "here is a case which probably you do not care to see; he is feeble minded, a cripple, and nothing can be done for him." On examination, however, the following points were noted: poorly nourished, anemic child, confined continuously to bed for past six months. Legs and thighs held firmly in a position of semi-flexion knees showing fibrous ankylosis. Patient could not stand or even sit up in bed because of deformity. Entire vertebral column was rigid and most of it firmly ankylosed. Rotation of the head was impossible, with very little antero-posterior motion in cervical vertebræ.

Upper extremities were very little affected.

Wassermann and all blood examinations were negative.

The one pronounced point in the entire history was referend to the alimentary canal. Child had repeated and almost constant intestinal disturbances, viz., eructations of gas, nausea, sour stomach, colicky abdominal pains, and the most obstinate constipation. He had an enormous appetite and would eat well, but suffered terribly after every meal.

Inspection showed the abdomen slightly distended below the umbilicus.



After twenty-four hours. Extreme type of coloptosis and stasis.
Entire transverse colon in pelvis.

Tonsils and teeth were normal and no pus accumulations could be found.

Radiographs of the intestinal tract were requested, and they elicited the most extreme type of intestinal ptosis with stasis, confined entirely

to the colon. Stomach was distended, but emptied itself completely in six hours.

Treatment: Operation, December, 1916, ileo-colostomy, anastomosing terminal end of ileum to descending colon, at a point two inches distal to splenic flexure, thereby short-circuiting the area of stasis and putrefaction.

Patient made an uneventful recovery from intestinal operation and three weeks later flexion deformities of lower extremities were corrected under ether anesthesia and a plaster spica of both hips applied including the knees. After two weeks the heavy cast was removed and a light one applied around the right knee only, which still showed a tendency to flex. The boy was then made to get out of bed every day.

At the end of three months repair had been very rapid. Patient



1. Shows right knee still in plaster. Child standing without support.
2. Brings out clearly the rigidity and fixation of spine. Patient's eyes are directed obliquely downward. Chin cannot be elevated more than shown

had gained twenty pounds in weight, intestinal symptoms had disappeared entirely, there was absolutely no indications of any continued arthritis, and excepting for a rigid spine still uncorrected, the child was in excellent condition.

He has since returned to New York and has engaged in business, full of ambition and energy, with mentality equal if not in advance of his age.

Second Case: This represents the same type of a case untreated.

Mrs. J. Reinhardt, 48 years old. For the past twenty years she has been a helpless invalid confined entirely to bed.

The trouble started twenty-two years ago, the symptoms being those of rheumatism affecting first the fingers and toes and later the elbows, knees, hips and other joints. At present every articular surface of her entire bony frame-work is completely ankylosed, including the jaw and the spine. Patient cannot even open her mouth and has to subsist on liquid nourishment introduced thru a glass tube. Body is absolutely rigid as a board and fixed in one position.

History in this case places the etiology definitely on the alimentary canal. Bowels move about once in every seven or ten days and then only after taking strong purgatives. It is not infrequent that two weeks elapse without defecation.

It is plain therefore that crippling arthritis is as a rule a symptom, a pronounced objective manifestation of a more obscure, though perfectly definite condition, whether it be bad tonsils, septic pyorrhea, chronic sinusitis, diseased ethmoids, suppurating middle ear, pent up secretions, delayed excreta, chronic inflammation of the appendix or gall bladder, pus foci anywhere, acute or chronic constitutional diseases, viz., influenza, typhoid, gonorrhea, syphilis, tuberculosis.

In such cases treatment of the joint disturbance primarily is an expression by the physician of a lack of thorough understanding of the case. The patient is put thru third degree torture associated with the manipulation of painful stiff joints, but the deformity constantly returns in aggravated form, ultimate cure being rendered far more difficult and much valuable time lost.

RECAPITULATION.

First. Every obscure case of arthritis should be put thru a most scathing cross questioning of history taking and most rigid physical and, if necessary, X-ray examination with a view of determining the etiologic factor or factors.

Initial and most thorough treatment should be directed at the cause, after control or elimination of which corrective measures should be pursued.

(a) Case No. 1 shows unquestionably a long standing condition of intestinal ptosis with colonic stasis, successfully treated by operation.

(b) Case No. 2 shows the same condition unrecognized until the arthritis changes were beyond repair. Diagnosis had been purely those of symptoms and not the real entity.

Second and Final: be very conservative about proclaiming a cripple hopeless. Neither let us place ourselves in the category

of our fore-fathers who considered these unfortunates the victims of divine wrath, ill omens from the gods, and consequently offered them no relief, but rather let us believe that each unsuccessfully treated case represents bad judgment and reflects possible discredit on his doctor.

For the crippled such a medical aspect will mean decided reduction in number and real relief from pain.

DISCUSSION.

Dr. Homer Dupuy: The essayist has alluded to the nasal sinuses and the tonsils as possible foci of infection. I wish to stress certain points relative to the tonsil as a factor in arthritis. I wish to emphasize this as strongly as I can that it is often very difficult to place the blame on the tonsils. I refer specially to that group of cases in which neither the history nor the local appearance give any clue whatever that the tonsils are causing the trouble. There has been no previous attack of tonsillitis. At the time of examination no foul secretions are obtainable from the crypts of the tonsils, and yet these very tonsils may be playing the chief role in causing the joint affections. True, after repeated examinations at intervals, we may be so fortunate as to obtain foul secretions from the tonsillar crypts after repeated probing. But you can readily see how difficult it is in such instances to say positively that the tonsils are responsible. Until we have a more certain method of arriving at a diagnosis in this particular group of cases, my personal attitude in the matter is, when every possible focus has been excluded, and if we turn to the tonsils as suspicious factors, I then advise what may be termed experimental surgery. We will remove the tonsils as a last resort, as they may be the cause of the joint trouble. Happy results have sometimes, in my experience, followed this method of procedure, and so I feel that the seriousness of the joint infections as stressed in the paper, amply justifies removal of the tonsil in this experimental way when we are dealing with this exceptional group of obscure cases.

Dr. Lucian H. Landry: The question of intestinal stasis has been very much discussed since being popularized by Mr. Lane some few years ago. However, we must remember that coloptosis does not always mean stasis. We were taught that the normal contour and position of the transverse colon was more or less a perfect arch reaching over from the hepatic flexure to the splenic flexure, with the convexity downward. With the advent of the X-ray, which enables us to get perfect tracings of the large gut, we find that the normal transverse colon is more or less in the position of a hammock and may reach to the umbilicus and even below without causing intestinal stasis. In other words, don't make a diagnosis of intestinal stasis solely from an X-ray plate.

Dr. H. W. E. Walther: I think this is a very important subject and believe that it is necessary that a thorough examination of patients should be made. A complete physical examination is essential, in order to determine the etiology of the disease. The prostate and seminal vesicles in the male are productive of various joint symptoms. I do not think that 80 per cent of all cases of illness are due to some form of enteroptosis as stated by Fossier.

Dr. A. G. Friedrichs: There is no doubt that a great many conditions of infection that are obscure might be cleared up by an examination of the mouth. As one of the active sources of a cause, the oral cavity should never be overlooked. I am of the opinion that an examination of this cavity should always be considered, examined and eliminated. I heartily agree with the essayist that an early recognition of the sources of infection would avoid much suffering and many a deformity. I had a case where the patient's feet were so involved that it was impossible for him to walk without the assistance of a stick. His mouth ~~was~~ examined and several teeth were discovered to be involved. They were removed, a pyorrheal condition of the mouth treated; a month after he is now entirely relieved and is walking about comfortably. This is only one of the many different conditions wherein lesions in the oral cavity play their part. This is the character of the work for which I have established a clinic in the Charity Hospital and I can assure the profession that it would be a great pleasure for them to cooperate in the clearing up of all such cases.

TRANSLATION

THE OCCURRENCE OF CLONORCHIS SINENSIS IN EASTERN CUBA.*

By PERCY LENNARD QUERENS, M. D., New Orleans, La.

Clonorchis sinensis, a trematode parasite of the bile ducts, and in some cases the pancreatic ducts has not been previously reported in Cuba, and tho not endemic should excite considerable interest on account of the possibility of planting the infection permanently thru the medium of the influx of Chinese and Japanese laborers from endemic centers of the orient: of course this depends on the presence of an intermediate host which has been found to be certain species of fish.

Craig¹, in his address before the American Society of Tropical Medicine during its Twelfth Annual Meeting, sounds the warning note of the gradual introduction of this infection and cites the instance of over twenty cases already reported in the United States.

In a later article Gunn², examining the feces of Chinese and Japanese immigrants coming into San Francisco found over 20 per cent infected with no superficial evidence of infection except slight anemia in some; the examination of eighty-two sick Chinese, all residents of California showed the presence of the parasite in

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Published with the permission of the General Medical Superintendent of the United Fruit Company.

twenty-four or over 29 per cent. Of these a large number had been in the United States from four to six years. The examination of thirty-two sick Japanese, also residents of California revealed the infection in four or 12 per cent.

In Japan and China the disease varies in frequency in different districts, ranging from 5 to 50 per cent and more; besides man, dogs, cats, and hogs are frequently found to harbor the worm.

DESCRIPTION OF THE PARASITE.

Clonorchis sinensis is a trematode worm of the phylum Platyhelminia, class Trematoda, and family Fasciolidae; the genus is divided into two separate species, viz: *Clonorchis sinensis* and *Clonorchis endemicus*, the differential characteristics according to Stephens³ being as follows: *C. sinensis* "In shape resemble *Opisthorchis felineus*, 13 to 19 mm. long, 3 to 4 mm. broad, at the beginning of sexual maturity 12 to 13 mm. long, 2.5 to 3 mm. broad. Oral sucker 0.58 to 0.62 mm., ventral sucker 0.45 to 0.49 mm. in transverse diameter. In the parenchyma numerous yellowish or brownish granules, especially behind the oral sucker and at the posterior end. Testicular branches very long, in the anterior testis often four, in the posterior testis five branches. Ovary generally with three large lobes and a smaller lobe. Vitellaria not always symmetrical, generally extending laterally from the ventral sucker to the ovary, interrupted in parts." In regard to *C. Endemicus* Stephens continues; "Very similar to the previous species and consequently generally confused with it. Length between 6 and 13 mm., width varying between 1.8 and 2.6 mm. Oral sucker 0.37 to 0.5 mm., usually 0.43 to 0.45 mm. in transverse diameter; ventral sucker 0.33 to 0.45 mm. usually 0.37 to 0.40 mm. No pigment in parenchyma; anterior testis with four, posterior testis with five branches. Vitellaria continuous."

The ova are dark brown in color, very small, and are operculated. The size varies slightly for each species as follows: those of *C. sinensis* are 26 u to 30 u by 15 u to 17 u, averaging 29 u by 16 u; those of *C. endemicus* are 26 u by 13 u to 16 u.

DISTRIBUTION.

C. sinensis is found most frequently in China, while *C. endemicus* is most frequently found in Japan, Tonkin, and Indo-China. Stephens thinks that the exact distribution of both can not be defined at present as there is no distinction commonly made.

PATHOLOGY.

Further quoting Stephens: "Both species of *Clonorchis* give rise to grave symptoms. The liver is generally enlarged, though when the infection has lasted some time it begins to contract. The surface of the organ is studded with white vesicles, and on cutting into it one sees numerous cavities with thickened walls (distended bile-ducts) filled with a brownish fluid containing innumerable eggs, which cause its color. Microscopically, the epithelium of the bile-ducts is either (1) entirely destroyed, or (2) actively proliferates, forming an adenomatous outgrowth. Occasionally this proliferation is not limited by the wall of the bile-duct but penetrates it and leads to a growth of numerous new ducts, forming a malignant biliary adenoma. The bile ducts have their connective tissue wall greatly sclerosed. These fuse with one another, forming areas of sclerosis devoid of liver tissue. As a result of these changes the liver cells atrophy and undergo fatty pigmentary and granular degeneration. Besides these changes, due probably to the toxic action of the flukes, mechanical obstruction due to the actual plugging of the ducts by the flukes causes retention of bile and icterus, and thru pressure on veins, ascites and hypertrophy of the spleen."

Castellani and Chalmers⁴ state that "In man they live in the bile-ducts, in the recesses in the wall of the dilated gall-bladder or of the bile-ducts, and in the duodenum. They may also be found in abscesses apparently unconnected with the liver. The intestine may show catarrhal inflammation. Ova have been met with in the abdominal lymphatics, while the flukes themselves have been found in a lumbar abscess. The blood shows an eosinophilia."

LIFE-HISTORY OF PARASITE.

As far as known, only the second intermediate host seems to have been discovered being fresh-water species of fish in Japan. This knowledge results from the work of Kobayashi and quoting Stephens is as follows: "He, (Kobayashi) fed cats with encysted flukes (cercariæ) from various fish and easily succeeded in infecting them, *e. g.* a kitten, proved to be un-infected by repeated examination of its feces, was fed on infected fish; a month later innumerable flukes were found in the bile-ducts, gall-bladder, pancreas and even in the duodenum. The fish infected were *Leucogobis guntheri*, *Pseudorasbora parva*, and to a less extent *Acheillog-*

nathus lanceolata, *Acheclognathus limbata*, *Paracheclognathus rhombea*, *Pseudoperilampus typus*, *Abbottina psegma*, *Biwia zezera*, and *Sarcocheilichthys veriegatus*. The cysts occur thruout the muscles and subcutaneous tissue of the fish. Length 0.13 mm. breadth 0.1 mm. The cercaria lies folded in the cysts, length 0.5 mm. breadth 0.1 mm. It tapers posteriorly. Skin at first covered with fine spines, disappearing as they grow older. Body dotted with fine pigment."

There seems to be no knowledge concerning the method of transmission in China as yet.

SYMPTOMATOLOGY.

This usually depends on the number of worms present and varies from a slight anemia only to more marked evidence of the presence of the parasites. The appetite becoms poor, the liver enlarges, becomes very painful, both to touch and subjectively; jaundice may occur. Following this the spleen enlarges. The general health does not seem to suffer until sometime after the infection has taken place, possibly five to ten years. Later as the condition progresses the liver contracts. Toward the end of the disease emaciation becomes extreme, ascites, edema of the feet and legs, and diarrhea being the usual sequelæ.

Vomiting frequently accompanies the late symptoms, acting in bringing about a rapid termination. Abscesses may occur due to secondary infections.

DIAGNOSIS.

Owing to the liability of confusing the clinical findings with other diseases of the liver that may give a similar picture, the diagnosis can be made only by finding the ova in the feces. This can be accomplished best by the use of washed centrifuged specimens, which are proven to be the most accurate.^{5, 6}

Ordinary smear preparations are not without their faults, furthermore the size of the ova reduces the frequency of their detection.

PROGNOSIS AND TREATMENT.

The prognosis is usually bad as no specific measures are available; symptomatic treatment only is possible. Removal from endemic foci has been found to be beneficial in some cases as it prevents further infection, and at times allows the patient to outlive the parasites provided that the number is small. Different

drugs have been used such as Thymol, Felix mas, and Salol, the latter having been found beneficial in the liver flukes of sheep.

Prophylaxis consists in boiling the drinking water in endemic regions; fish and all shell-fish should not be eaten uncooked.

AUTHOR'S CASE.

A. T., a Chinese laborer, aged thirty-one years, entered the hospital February 5, 1917, with the following history: he was born in the Canton District of China, and came to this country eight years ago and was perfectly well at the time. He continued in good health until four years ago, when he began to have a dull pain in the region of his liver associated with a feeling of heaviness. During the past year the trouble has been getting worse and he noticed that he is losing weight very rapidly. He thinks that there may have been some swelling of his legs, but has no notice of it. For the past four months he has always vomited after taking a full meal, and is suffering with a severe diarrhea that does not seem to get any better. Three days before entrance he began to have some slight chills followed by fever coming on daily.

His past history is negative, likewise for venereal diseases.

On examination we find a moderately well developed individual but extremely emaciated; the skin is dry and flabby, with a slight tint of jaundice. The entire muscular system shows a marked degree of atrophy and loss of tonicity. The pupillary reflexes are sluggish, but react to light, both directly and indirectly, and to accommodation; the cremasteric reflex is absent, also the knee-jerks; the Babinski reflex is positive.

The eyes are sunken and the corneæ are jaundiced. The tongue shows a number of small ulcerated patches on the margins, and fissures on the dorsum about one millimeter in depth extending two or three centimeters from the tip. The chest on palpation reveals normal expansion; vocal fremitus is increased in all areas due to the thinness of the chest wall; on percussion there is resonance thruout, and on auscultation the respiratory sounds are exaggerated.

The heart shows slight evidence of atrophy; the first sound is shortened in all areas and weakened; a hemic murmur is audible in the mitral, also the aortic regions and is transmitted from the latter into the larger vessels of the neck.

The area of liver dullness is markedly decreased in size, beginning at the level of the fifth rib and extending 14 centimeters in

the anterior axillary line; on deep inspiration it descends about half centimeter and is very hard with an irregular edge. Exquisite tenderness accompanies palpation of the entire epigastrium; deep palpation is not permissible. The spleen cannot be felt and does not descend on deep inspiration; the remainder of the abdomen is negative. The genitalia are negative.

Blood Examination:

Total White Cell Count.....	6,250.
Total Red Cell Count.....	1,520,000.
Hemaglobin.	30%.

Differential White Cell Count:

Polymorphonuclear Neutrophiles.	80%.
Lymphocytes.	18%.
Endothelial Leukocytes.	2%.
Eosinophiles.	0%.
Basophiles.	0%.

100%.

A few Estivo-Autumnal Malarial Parasites, ring forms. Numerous nucleated red corpuscles, macrocytes, and basophilic red cells.

Urine Examination

Clear, amber in color, acid in reaction, traces of bile and albumin present. Specific gravity 1025. Negative for pus. Finely granular casts in moderate numbers.

Feces Examination

Ova of *Clonorchis sinensis*.

Progress notes: The patient was given quinin bisulphate daily in doses of 15 grain every 8 hours. On the second day the temperature rose to 102 degrees (F), immediately dropping to normal and remaining as such thruout; improvement in the general condition was noticed; he vomited at times, but only between the quinin administrations.

The quinin was reduced to 10 grains on the third day, and frequent blood examinations failing to reveal malarial organisms the quinine was further reduced to 15 grains daily. On the sixth day following admission the patient seemed to be getting worse; vomit-

ing became protracted and no nourishment could be retained. Hypodermoclysis was instituted, but he continued to sink very slowly. Ten days after admission death ensued.

As no autopsy was obtainable complete proof of the condition could not be obtained, but the general clinical picture, and the laboratory findings were sufficient to establish beyond doubt the cause of death.

CONCLUSIONS.

Clonorchiosis is reported for the first time in the Island of Cuba.

The gradual introduction of the disease into the New World should stimulate efficient measures to prevent it becoming endemic provided that the intermediate host exists.

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PROCEEDINGS OF THE AMERICAN SOCIETY OF TROPICAL MEDICINE

THE CONSEQUENCES OF THE EUROPEAN WAR FROM A MEDICAL POINT OF VIEW.*

By D. RIVAS, Ph. D., M. D., Philadelphia.

(From the Laboratory of Comparative Pathology and Tropical Medicine, University of Pennsylvania.)

Almost three years have elapsed since the gigantic struggle of the European conflict, unparalleled in the history of the world, has kept nations engaged in a war of destruction and desolation, and although this struggle clearly shows the causes and traces of its beginning, it appears so far to have furnished no prospect as to when it will end. On the contrary, the conflict rather tends to disseminate further and further the germ of destruction which originated it, and having at last reached our shores, it is time for us to attempt to cope with circumstances which the peril demands.

* Read before the American Society of Tropical Medicine, New York City, June 5, 1917.

To the philosopher, wars are merely natural sequences in the evolution cycle of the human race. To the economist they are the source of speculation as to the best means of readjusting the social equilibrium. To the rulers of those countries engaged in the struggle, wars make them the prototype of patriots and exponents of the principle of right and liberty. To the statesman, and diplomat in general, wars are perhaps a source of satisfaction, in that they may see the realization of their prophecies and chimerical speculations. To the financiers wars serve the purpose of speculation in regard to the most feasible means of supplying the fuel, and the gold which keep alight the flame of wars. The general, aided by his instruments of destruction, sees in the war a means of testing and putting into practice and actual demonstration, his strategic combinations. The soldier, the real altruistic martyr, sacrifices the most precious gift of nature, "his life," for the welfare of his country. The agriculturist is eagerly engaged in supplying food, and likewise the chemist, physicist, engineer, etc., all professions and specialties in general, have a duty to perform during the conflict. All the resources of the country have to be used to the best advantage for the successful accomplishment of the final test, the Victory.

But since for the successful attainment and maintenance of all these varied offices and duties, it is of primordial importance that the health of each and all of the units engaged in the conflict, the individuals, should be maintained, in this capacity the modest and unpretentious, perhaps obscure, but not the least essential, co-operation of the medical profession, and of hygienists in particular, takes a preeminent part in the struggle.

That diseases are often more destructive than wars themselves, is a known fact. To this no doubt may be attributed the disastrous consequences of the Crusades and of many other conflicts of which history furnishes numerous examples, and this explains for itself that the lessons learned from past experience have paved the way for the mission of the medical man and hygienist in our modern warfare, to be regarded as one of the most important.

It is only natural that in war most of the attention of the medical profession should be chiefly directed primarily to the selection of those physically and mentally fit for the struggle, and subsequently to hospital work for the purpose of taking care of the un-

fortunate, sick and wounded. But by doing this alone are we not neglecting another field of action, perhaps the most important since it is not concerned with the welfare of the present, but of the future generations, namely the prevention among the troops of certain chronic affections, commonly known as parasitic disease?

This field of activity becomes most important when, thanks to the modern discoveries made in recent years in parasitology and tropical medicine, the nature of most of these diseases, their mode of prevention and their path of transmission and dissemination have become better understood.

Generally speaking, in regard to the nature of these affections, it is known that parasitic diseases in contrast to most bacterial diseases, are as a rule slow in onset, of long duration and of uncertain termination, which usually ends fatally, because most of them are incurable. Not uncommonly during the greater part of the period of affection, the patient may not even show any appreciable symptoms of the disease for several years, but nevertheless is meanwhile a carrier of the parasite which causes that disease and consequently he is a menace to the community. Leprosy, filariasis, hookworm disease, malaria and many other diseases of tropical countries may be cited as examples of such affections. On the contrary, such bacterial diseases as diphtheria, cholera, plague, etc., are acute, of short duration and end in death or complete recovery and usually complete immunity. They give, as it were, warning of the danger, with the result that they are easily and timely controlled, while parasitic diseases develop insidiously and consequently, as is usually the case, the attention of the physician and hygienist is called too late.

It may be added in this connection that the fear which bacterial diseases usually awaken, in contrast to the neglect with which the parasitic diseases have been regarded, is an erroneous conception, because while the former are of short duration and end either in recovery or death, leaving no traces of it, the latter are of long duration, may give no warning of their existence as already stated, are transmissible during the time of the affection, and commonly make of the patient an invalid, with the result that he becomes unfit to perform his social obligations and consequently is a burden to himself, to the state and country and a constant menace to the community. The study of the hygienist therefore should not be con-

cerned so much with the welfare of the individual as with the community.

It is a known fact that war is the means of dissemination of diseases from country to country and even to other continents. History shows that most of these parasitic diseases, now prevalent in Europe have been imported from the Orient following the line of trade and of the return of troops. It has been even suggested that the downfall of the Grecian civilization was brought about by the importation of malaria by troops of Alexander on their return from the Orient, and the same has been said of the Roman Empire. The Roman legion not only imported these diseases from the Orient, Greece, and Africa, to Italy but also disseminated them through Europe. The history of the dissemination of some bacterial and parasitic diseases from the Orient to Africa and Europe and then to America may be summarized as follows:

Leprosy: References to this disease is found in ancient Japanese books. Hippocrates says little concerning it, but Aristotle described it better. The disease was imported from the Orient into Egypt by Alexandrian troops (about 300 B. C.). From Egypt it was carried to Greece and later to Italy by means of troops of Pompey, and finally was disseminated through Europe by the Roman legions and more especially later during the Crusades by the return of the troops from the East. Leprosy became so prevalent in the South of Europe and France in the thirteenth century, as to enforce both the Church and State to dictate severe prophylactic regulations in order to check the ravage of the disease.

About the end of the fifteenth century leprosy was introduced into Madeira and Canary Islands and then into America to an extent by the Spaniards, but chiefly by the English negro slaves to the West Indies, where the disease is most prevalent in America at the present time.

It has been suggested that leprosy existed in America in ancient times but as there is not sufficient evidence to support this, it has come to be believed that the disease was imported to this continent from Europe and Africa.

Cholera: It is well known that the home of this disease is India. Cholera was known in that country from the most ancient times. Charaka and Susruta describe symptoms which most probably refer to cholera.

The spread of cholera from India to Europe and America has occurred at different times, the most important epidemic of which was that of 1826, which continued until 1837. It reached France (via Persia, Tabriz, Tiflis, Astrakhan, Moscow, Poland, Austria and Germany and England) and finally the United States, Mexico, Cuba, Central America and the north of South America. The next important epidemic was that of 1863 to 1873, which was spread by way of Persia and Arabia to Europe and then to America.

Bubonic Plague: This disease commonly known as the "Pest," like cholera, also originally is a disease of the East, and at different times has spread to Europe. It was imported to America by the Negro slaves. The most important wide spread epidemic of plague was that of 1904, which reached Persia and Russia in 1906 and subsequently spread to almost every country, Arabia, Egypt, Tunisia, Algeria, Scotland, and to the United States and South America.

Ankylostomiasis: This disease commonly known as hookworm disease, is caused by a small parasite nematode inhabiting the intestine. It is believed that the parasite originally existed in Africa from which it was disseminated to America by the negro slaves. The disease now is cosmopolitan, being found especially in tropical and subtropical countries.

Filariasis: This disease commonly known as elephantiasis is another legacy of the Orient and Africa. It is produced by a nematode (*Filaria bancrofti*) which inhabits the lymphatics of the pelvis. The home of the disease is probably Asia, it was imported to Africa, and then to America by the negro slaves, carried especially to the West Indies where it is now most prevalent in America.

Schistosomiasis: This disease is produced by a parasite trematode which inhabits the blood. Three different species of parasites, namely, *Schistosoma japonicum*, *S. mansoni* and *S. hematobium* have been found to be the cause of these diseases each one giving rise to symptoms corresponding to the location of the parasite or their eggs in our bodies.

The disease originated in the Orient, where it is most common and has been introduced into America by the trade. It is now common in the West Indies and the north of South America, and not a few cases are to be found in California and some of the other

western states and north of Mexico, imported by the Japanese and Chinese population in those places.

There are other diseases common to Africa and to the Orient which might be mentioned in this connection as having been imported to America and a few others which though at present they do not exist in this country may perhaps make their appearance in the near future. The above mentioned may suffice to clearly show the menace in which this country may be exposed in the future in consequence of the present European conflict.

This danger naturally becomes more seriously recognized when we take into consideration the nationalities with which the American army will come in contact abroad, more especially in France, where, since the beginning of the war there has been a constant ingress of troops from almost every part of Africa and the Orient.

It requires but a moment of thought to realize that France at present is subject to similar conditions as in the time of the Crusades, that is, that it represents the centre for the organization of the armies now engaged in the struggle, and consequently it is in France, more than any other place, where the attention of the American hygienist should be attracted. With our knowledge and past experience concerning these diseases, and in realization of their danger to this country, it is essential and of the greatest importance that special attention should be given to carefully and systematically carry out appropriate prophylactic regulations among the troops while abroad as well as after their return to America in order to safeguard the health of future generations.

It will be therefore indispensable, if America is to take an active part in the present European war, to organize a body of competent physicians and experts in the laboratory diagnosis of these diseases, in order to safeguard their importation to America by the returning troops. It may further be suggested that after the war, all soldiers returning from Europe and from France in particular, should be subjected to a rigorous examination, and if possible to a quarantine before being permitted to enter the country.

It is time for us to acknowledge the truth of the situation and to realize that while the laudable work of the skillful surgeon and clinician in general at the front is concerned especially with the welfare of the troops, it is for the laboratory worker and the hygienist and the parasitologist in particular to look after the health

of the future generation upon which depends the work of reconstruction after the war.

There is nothing to gain but much to lose in failing to realize the real truth. That diseases common to those countries have been imported into France with troops from Africa and the Orient cannot be denied, and that the soldiers by coming in contact with these troops will become infected with these parasitic diseases and import them to our shores, unless proper prophylactic regulations are timely enforced, admits of no doubt and the sooner we realize the gravity of the situation the better it will be for the future generations in our country.

In view of this, the writer, guided by one of the highest duties of the medical profession, namely: the health and welfare of mankind, and not the least, inspired by that patriotic love, common to us all for the future of the Americas, may be allowed to suggest that the American Society of Tropical Medicine brings the above facts to the knowledge of the American Government, and that if desirable the society appoint a commission to that end so as to obtain from Washington the proper cooperation for organizing a campaign of prophylaxis among the troops abroad against the real and most dangerous enemy of our future generation, namely: against those chronic bacterial and parasitic diseases such as leprosy, malaria, filariasis, ankylostomiasis, schistosomiasis, etc., common to Africa and Oriental countries.

Further, it may be suggested that the commission formulate plans for the organization of sanitation camps provided with the necessary instruments, laboratory appliances, etc. and other facilities and requirements for the study of these African and Oriental diseases, with the chief point in view of outlining appropriate prophylactic measures and regulations for the prevention of their importation into this country. Likewise the organization of a quarantine station in some of the islands in the Atlantic for the returning army where every soldier and officer, without exception, should be submitted to a careful observation and study for some time, consisting in the examination of the blood, excreta, etc., before entering the country.

History clearly shows that wars have been the end cycle in the evolutionary development of civilization. The most powerful nations have come out of the struggle feeble and weak and soon died out, due no doubt to unpreparedness against the natural consequences

common to the wars, namely: the importation and spread of those diseases which soon deprive the human race of the energy which health alone brings. The fall of the Egyptian civilization, of which merely vestiges are left; the sudden termination of the Greek culture; the slow but sure disintegration of the Roman Empire and the centuries of lethargy of the Middle Ages in continental Europe, probably were due, as have been suggested, to these causes.

It is perhaps not far from the truth to predict that the same fate of Greece and Rome awaits the Americas unless timely attention is given to prevent after the war the importation to this country of those diseases common to Africa and the Orient. Preparedness therefore, should not merely consist in fitting our troops for the present conflict, as it has been properly done, but also to safeguard the health of the generations to come upon which will fall the duty of maintaining the prosperity and welfare of this country.

INFECTIOUS PSYCHOSES, ESPECIALLY IN TROPICAL DISEASES.*

By DR. A. AUSTREGESILO, of Rio Janeiro, Brazil.

(Translated for the JOURNAL by Dr. Charles Chassaing, New Orleans.)

Psychic troubles usually have two etiologic sources; intoxication and destruction. Intoxications may be infectious or not, endogenous or exogenous.

It seems that the intoxications are the chief source of the psychoses or the psycho-neuroses because the nervous system, representing the defense of the organism, is the most sensitive to said intoxications.

Some authors might state that paranoia and the maniac depressive psychosis are not produced by a known intoxication. These are degenerative states, that is of sensitiveness to endogenous or perhaps endocrinous intoxications. We well know that emotions bring to the organism, loaded with intoxication manifesting itself by digestive troubles, insomnia and serious disturbances of metabolism, which form vicious pathologic circles.

The mental syndromes of infectious origin have always borne the influence of the French, German, or English schools, according to the classification adopted by the physician.

* Read by title before the American Society of Tropical Medicine, New York, June 5, 1917.

With Kraepelin I shall study the following syndromes of the infections: a. the febrile deliriums; b. the infectious deliriums; c. the post-infectious states of psychic weakness. We must refer to the exhaustion psychoses, that is the delirium of collapse and the amentia of Meynert.

Kraepelin's view is analytic. Authors in general include the above syndromes under the denomination of the infectious deliriums and psychoses.

According to Anglade, the infections, whether acute or chronic, are frequently the causes of mental troubles by various mechanisms. In the acute infections, during the febrile period, these troubles are due to a cerebral intoxication by the microbial toxins and the products of the fever; in convalescence they are due to the more lasting results of the toxins on the cortex. During convalescence the troubles are sometimes of the acute state, at times mental confusion, at others an ill-defined delirium.

The chronic infections occur by intoxication of microbial origin, by auto-intoxications, or by infectious destructive lesions, such as accompany syphilis or tuberculosis.

The febrile deliriums have no uniform symptomatology.

Several authors, like Liebermeister, Kraft-Ebing, Ball have treated the question in a more or less extensive manner.

We can classify febrile delirium according to intensity into: 1st degree—malaise, psychic torpor; 2nd, alteration of consciousness is deeper, psycho-sensorial troubles appear accompanied by more or less disordered acts; 3rd, ubinilation of consciousness is greater, confusion is accentuated; 4th, great general torpor, profound weakness sometimes almost lethargy and coma-vigil. All febrile diseases may produce the same delirium, such as variola, scarlatina, erysipelas, acute articular rheumatism, grippe, yellow fever, as I have had occasion to verify, bubonic plague, malaria, etc.

The prognosis of this febrile delirium is rather grave. Kraepelin's statistics show a mortality of 35.6 per cent. The duration is generally one week, sometimes longer.

The differential diagnosis is to be made between states of excitement of different psychoses, especially those of exhaustion. (*Erchopfung psycose*). The infectious deliriums proper hold a more specific place in psychiatric nosology, constituting the infectious psychoses and psychic weakness.

In fact, we know that the infections may present morbid mental states from the outset to convalescence, such as the cerebral torpor of Ball (mental confusion of the first degree), up to the amentia of Meynert (incoherence, chaotic condition of ideas, various hallucinations, etc.), as may be seen from the work of Pilez.

I need not reiterate the mental troubles which occur during European diseases such as typhoid fever, so well studied by Baillarger, Simon, Sauvet, Voisin, Percy, Smith, Pagliano, Aschaffenburg, Deiters, Aegis and others; variola (Kraepelin, Thore, Claye, Shaw, Luinaud, Emminghaus); grippe (Althaus, Piles, Ladame, Bidou, Jeoffroy, Voisin, Hutchings, Camia, Mosert, Jatrowitz, Kraepelin, Austregesilo); acute articular rheumatism (Moebins, Zinn, Kraft-Ebing, Guislain, Giraud, Mabile, and Lallement); pneumonia (Kraft-Ebing, Kraepelin, Fontaine, Orbeil, Regis, Klippel, etc.).

I shall speak of acute and chronic diseases peculiar to warm countries. Tropical diseases are not exceptions to the general rule.

MALARIA. In paludal infection, authors have described mental troubles with either the character of febrile delirium, or of infectious delirium, or of the delirium of collapse, these three including the paludal psychosis proper.

Kraft-Ebing and Kraepelin state that the infectious delirium is like that of variola and the initial delirium of typhoid fever. States of very violent excitement, of anguish with serious psychic troubles leading to thoughtless acts, may be observed. These states may be rapid or prolonged, sometimes accompanied by convulsive attacks, resembling the obnubilation of consciousness of epileptics. They sometimes assume the febrile rhythm, that is the intermittent or tertian type. Some authors have described larval types, of which I doubt, wherein the febrile attack is substituted by delirium. The larval type of delirium is preceded by a more or less intense febrile reaction, except in the algid pernicious type in which the mental state is that of the delirium of collapse.

Marchiafava and Bignami state that the comatose pernicious form is frequently preceded by delirium of the febrile type. They admit with the Brazilian authors of a delirious pernicious form in which delirium is the dominating syndrome and which may assume the clinical physiognomy of acute delirium, followed by a state of torpor and coma. "An euphoric state of excitement may precede the delirium, accompanied by auditory and visual hallucinations

which may be followed by violent and absurd acts." One may also observe spells of calm delirium even in the pernicious delirious form, that is with the type of elementary mental confusion.

These spells are usually the pernicious equivalents of paludal infection. These mental troubles may be accompanied by somatic and the psycho-somatic syndromes like aphasia, hemiplegia, amaurosis, tetany, bulbar and cerebellar phenomena, tremors, etc., as signalized at home by Fonseca.

Mental paludal troubles may then assume several clinical aspects: febrile delirium, infectious delirium, of greater consequence than the preceding, consequence of the pernicious type or of tropical fever, in the form of mental confusion, either excited or light, taking sometimes the twilight state of the epileptics.

Following the active infection, during convalescence, there occurs post-infectious psychic weakness; sometimes the Korsakoff type of polyneuritic psychosis.

The malarial cachexia may be a cause of psychic delay, establishing simply a lowering of the intellectual level; at other times may lead to paludal infantilism, admitted by a large majority of observers. The thyroid gland constitutes the essential pathogenic instrument.

Those are about the ideas of Lemoine and Chaumier in their writings on the paludal psychoses; in the forms cited delirium may appear, but then, while in the first form it assumes the noisy type of the deliriums of pyrexia, it is calmer in the second, slower and with a tendency to chronicity. Outside of these two hypotheses, according to the same authors, intellectual troubles follow in former malarial subjects in whom the disease exists only in a latent state and the larval accidents generally substitute the febrile phenomena.

Malaria while generating true psychoses may predispose to the development of latent mental states; independent of the paludal psychoses, such as mania and melancholia (depressive maniacal psychosis) observed by Sebastien; alcoholic delirium, mentioned by Marandon de Montyel, paranoiac periodic delirium, as in a personal case, the resumed observation of which follows:

1. Domingos, white, aged 32, single, a Brazilian. Parents living and healthy. Has three brothers and two sisters. Moderately habituated to alcohol and onanism. Always irritable. On bad terms with his family. Having no money, he came on foot from the interior of Brazil to Rio Janeiro, the trip lasting 25 days. Passing through malarial zones he contracted a tertian infection. He began to notice that with his long

heard he resembled Jesus Christ and, convinced of his role of Redeemer, he determined to teach the precepts of virtue to the people. He had auditory hallucinations, mingling with his religious delirium, rather in compatible with his acts and his life. He entered the National Hospital for the Insane in a febrile state. His blood revealed the presence of the tertian parasite. Quinin treatment was instituted and the febrile attacks as well as the paranoiac delirium ceased. He left cured.

There is no general paralysis of malarial origin, as is admitted by a few authors, such as Rey and Bonet.

The cases of malarial aphasia are not rare. I may cite the case recently published by Prof. Froes; a few unusual syndromes, as the tremors of the disseminated sclerosis type, like the case observed by M. Britto; the cerebellar syndromes as in the observation of Mendonca and already mentioned by the Italian authors, as Marchiafava and Bignami; neuroses, like malarial neurasthenia, described by Lejeune (thesis, Lyons, 1890), by Tessier (Bul med., 1893) and which we are accustomed to see in the rubber explorers of North Brazil (Amazon), in travelers, soldiers, compelled to cross the malarial zones and attacked by the grave malaria of these regions; epilepsy, hysteria, etc. Alcoholism may accentuate the clinical aspect of the malarial neuroses and psychoses because the residents in the malarial regions often abuse of the strongest alcoholic drinks, sometimes taken ignorantly as prophylatics.

YELLOW FEVER.—The subject has been little studied. Yellow fever, as all infections, holds a place in the etiology of psychoses. Among us M. Helvecio de Andrade was the first to study the mental perturbations consecutive to typhus icteroides. Later M. Carlos Eiras and Prof. Marcio Nery studied the same subject. M. Helvecio de Andrade called attention to the psychic disturbances in convalescence of yellow fever and claims priority on the subject.

The cases of M. Carlos Eiras are more minutely described for they have been sketched by a specialist's hand. In this alienist's article the clinical evolution, symptomatology etc., are considered mostly from the psychiatric viewpoint.

Prof. Marcio Nery adds M. Eiras' observations to his own and gives a nosological classification.

Generally the mental disorders appear from the seventh to the fifteenth day after the icteroid infection. During the period of invasion and the attack, violent febrile delirium is rarely seen.

The post-icteroid mental troubles, according to the authors quoted, are sometimes of the type of simple confusion, at times

similar to the twilight state of the epileptic, or the amentia of Meynert, often simulating the maniacal fury of the ancient authors.

Prof. Marcio Nery describes the mental perturbations of yellow fever, or the icteroid psychoses, as he calls them, and groups them as follows: 1st, group includes the cases of transitory or permanent confusion. 2nd, group comprises the maniacal states. 3rd group, the melancholic states. 4th group, includes the multiple cases wherein the icteroid infection awakens the latent neuroses and psychoses.

This tentative classification is good if we modify the words *maniacal* and *melancholic*. Really yellow fever may show febrile delirium or the true psychoses. The post infectious psychoses are always of a chaotic character.

We may deduct from the observations of Eiras and Marcio Nery that several types of confusion may be observed, at times simple, at others with twilight states, sometimes with intense agitation and hallucinations, again with depressive states (but rarely). Hence the expression "maniacal and melancholic states" must not be included in the group of mental perturbations of icteroid origin, as these states are scarcely similar to the states of mania and melancholia which is a feature of maniac depressive insanity.

We should, however, admit as mental troubles in yellow fever: 1. Febrile delirium. 2. Different degrees of mental confusion, or better, infectious states of psychic weakness, constituting the icteroid psychoses. 3. Constitutional psychoses awakened by the infection. The neuroses should not enter into this group.

The prognosis in these psychoses is variable, but usually favorable. In Prof. Nery's cases, 10 ended in cure; one in a slight psychic weakness and one in complete dementia. In these patients there was a pronounced psychopathic taint.

The treatment must be prophylactic and curative.

Prophylactic—the individual should be toned up immediately after the infection, as the patients generally resume hard work.

Curative—nothing special to be said which would not apply to the psychoses caused by other infections.

PLAGUE. Bubonic plague, like all other grave infections, includes psychopathic deviations in its symptomatology. While medical literature on the subject is not profuse, from what is stated by the authors and what I have observed, it may be affirmed that the Levantian disease is not an exception. Anglade simply states that in

plague delirium without specific character is observed. Pösch, in the *Treatise of Tropical Diseases* (Mense) states that the *senso-rium* may often be involved. Delirium may be benign, or wild, or murmuring, or lucid, later becoming furious (Todsuchfällen). Frequently, continues the German author, delirium leading to flight may be observed. Attacks of meningitis with hallucinations sometimes supervene. During convalescence apathy and mental weakness may come on, besides other somatic syndromes of nervous origin.

In its different forms, especially the grave, plague may show febrile delirium, of the calm or the furious type. The delirium may be the expression of the febrile infectious reaction or of the intercurrent alcoholism. True infectious delirium may accompany the Levantian disease. Infectious delirium may assume several aspects, from the acute oneirismal type (more rare) to acute hallucinatory delirium.

In convalescence a state of psychic weakness supervenes, or cerebral torpor or marked mental confusion, sometimes with psychic depression simulating a melancholic state. I have had occasion to verify the latter in a case at the hospital of Jurujaba, that of a young girl in a state of pseudo-melancholic weakness, with marked lack of memory, tending to sadness, etc.

Dr. Tavares, of Macedo, then director of the hospital, in his report on plague, published in the *Brasil Medico*, reports cases with more pronounced mental troubles. This is how he expresses himself:

“Delirium is the most frequent of all the nervous symptoms of plague, which was noted in all symptomatic degrees. I have had occasion to observe from moderate delirium, the loquacious, up to the wild and that of persecution. In two cases mental alienation followed violent and prolonged delirium. One of the patients was taken into an asylum after recovery from the plague infection and was discharged cured; another died, presenting clinical phenomena of lipomania. In two patients delirium created a tendency to suicide.”

While the description does not come from a specialist, it may be seen that the clinician presents a good observation. We find synthetized therein cases of febrile delirium, of amentia, of post-infectious psychic weakness which may lead to special mental states.

Prof. Goncalo Moniz, of Bahia, in a second work on plague, speaks of mental perturbations observed, similar to the above described.

Prof. Juliano Moreira has had occasion to corroborate in his practice two cases of plague psychosis, ending in the delirium of collapse of Kraepelin.

I transcribe two observations contributed by Mr. Moreira:

Obs. 1. M. J. S., 32 years old, Brazilian, single. Heredity—of slight value, according to the family's information. Previous history—Good health up to a certain point, then he commenced to have a bad stomach; he became nervous (as stated by a brother). He did not drink usually. History of the delirium—After a day of intense work in the business place in which he was employed he felt weak, his legs giving way. He went to bed without fever, but could not sleep. Thinking that he had fever in the morning, he sent for a physician, who prescribed a diaphoretic and reassured the family. By night the patient began to complain of some mental confusion and of not seeing well the people about him. Summoned again, the physician found his temperature 37.8° C. and some delirium. His condition being identical the next day, with even an increase of mental perturbation, it was determined to call in consultation a specialist in mental diseases. Having been summoned, I found the patient, oblivious of place, of time, changing the names of persons, a little anxious, with an uneasy expression, but without saying what troubled him. From time to time he raised his head from the pillow, looking around as if seeking to recognize something (illusions of hallucinations). When asked how he felt, he pressed his forehead and said he was foolish (literal). After he uttered incoherent words or repeated my questions with effort and sometimes all twisted. A careful examination revealed nothing abnormal. Axillary temperature, 38° C. There was no adenitis. The next day the signs of mental confusion increased. The patient, whose ideas yesterday were chaotic, was now incapable of recognizing any one of the family; hallucinations developed: angels flying, a knife-grinder working actively in a corner of the room and seeing sparks fly from the millstone transforming themselves into lizards. Although irrational, some word uttered near him would at times make him understand his inability to fix his attention. He would then exclaim: "You want to confuse my ideas;" "You do not say one thing in accord with another," etc. Variable temper, motor excitement; the patient tried to get out of the room, gesticulated, muttered. Insomnia. He loses weight visibly. Temperature 38° C. Baths. Nauseated at night. Photophobia. The next day, temperature 40°; tongue coated, vague look, skin dry, breathing rapid. Painful swelling of a femoral gland. The diagnosis is established. The infection which had produced a true infectious delirium is identified, ending in the delirium of collapse of Kraepelin. The patient is transferred to the plague hospital, where the disease continues to develop and ends in death.

Obs. II. M. P. C., twenty-two years, Brazilian, medical student. Heredity: Father a neuropath; mother is an alcoholic. History of the disease: Malaise, slight chills, light cephalalgia, 37.5°. At the end of the second day, signs of mental confusion, auditory and visual hallucinations, the latter more marked. Third day, confusion of time and place increased. Temperature, 37.6°. Fourth day, pains in inguinal regions, right glandular swelling, 37.8°. Sixth day, inflammation of glands of both sides, 37.8; small pimple on the right; bacteriological examina-

tion positive. Anti-plague serum injected; the patient begins to improve. The psychic troubles diminished progressively. He began to know the members of the family, but not the physician. The case ended in cure.

I shall mention in passing a case I had occasion to observe and autopsy at the Paula Candido Hospital, wherein the nervous and psychic reactions were nearly all included. High fever, delirium; phenomena of meningitis and coma, such were the rapid evolution of the disease. There were no ganglia nor signs of pneumonia.

The autopsy revealed intense congestion of the meninges and the cerebral cortex, and glandular lesions of plague.

By collecting the facts observed we can see that mental perturbations are frequent in plague.

Febrile delirium appears. Infectious delirium sometimes follows, with mental confusion, with psycho-sensorial troubles, flighty ideas, sometimes a state of agitation, with the appearance of acute delirium. The delirium is at times calm, loquacious, muttering, sometimes oneirismal, rarely in the form of the delirium of collapse of Kraepelin. After the infection in some cases the psychoses from post-infectious weakness appear, especially by exhaustion. In two cases reported by M. Macedo, the mental perturbations lasted longer than the febrile state, extending so long after convalescence that the patients had to be interned. States of confusion, with marked depression, may be the expression of post-infectious troubles. The prognosis is generally favorable.

One case of M. Juliano Moreira ended in death, one of M. Macedo in a persistent psychosis.

The treatment is not different from that of similar psychoses.

CHOLERA MORBUS.—Although there has not been cholera in Brazil for a long time, a short reference to it is due. The studies of Ball, Beglas, Delasiauve and published in *l'Encéphale* (1885), in the *Annales Médico-psychologiques* (1893) demonstrate that the mental troubles consecutive to cholera are like the other infectious psychoses and usually show the type of Meynert's *amentia*, as in the case of Beglas.

According to Krause and Rump (Mense's Treatise), the psyche is little altered during the algid state, and in some patients a little apathy is observed, followed sometimes by delirium, torpor and coma.

Recently Obregia and Pitulesco (*l'Encéphale*, No. 5, May, 1914)

have described the psychoses of cholera. The authors include, first, an asthenic form wherein the motor troubles may reach the state of stupor, with or without physical euphoria; second, a delirious form. "The patients forming this group are asthenic also, but slightly agitated, talking continually like maniacs; their words are senseless." To confusional agitation is added at times a slight motor agitation. Third, convalescence does not occur equally and in the same manner in all patients, from the psychic viewpoint. At times a state of physical euphoria follows, in contradiction to the weakness of the patients.

In a few cases there was a state of *post-choleraic astheno-mania*; that is, spells of agitation which disturb convalescence, the disease retaining its stamp of asthenia.

"Finally, about 60 per cent of the choleraic patients showed no mental troubles during nor after the disease."

I know of no observation regarding mental troubles in bacillary dysentery, Mediterranean fever, Nasha fever, dengue, kalazar, boubas, etc. We can apply to these patients what Profs. Juliano Morena and Afranio Peixoto wrote in their report to the Congress of Lisbon: "In meeting fields prepared by neuropathy, the infections hatch mental troubles, as there is nothing special in the various psychic manifestations of a pathological order."

SLEEPING-SICKNESS, according to the descriptions from the classic pen of Manson, Mense and others, produces cerebral perturbations, usually non-vesanic, connected with the symptomatology of infection: somnolence, torpor, coma and death. Nevertheless, the disease sometimes begins by epileptic attacks, by spells of agitation resembling mania. According to Le Dentec, sleeping-sickness in its pre-hypnotic or febrile period shows troubles of character, of memory, of fixation and of association, deficit of intelligence, etc. Many perturbations of the nervous centres are met with in the new Brazilian trypanosomiasis (disease of Chagas), which is now beginning to be studied.

LEPROSY.—Opinions of authors vary as to the existence of a leprous psychosis. Prof. Juliano Moreira, in a review with report of personal cases, does not admit of a leprous psychosis, properly speaking. Many authors, such as Sainton, Dagonet and Duchamel, Finzi, etc., barely refer to mental troubles occurring in lepers. Kraepelin refers to leprosy and to the work of Moreira in the last edition of his treatise on psychiatry.

I have had occasion to observe the following case:

S. M., 40 years old, white, single, Brazilian. Entered the hospital for the insane, Pinel section, on January 12, 1907. Notes of the Pavillion of Observation of the Psychiatric Clinic: "Alcoholic habits; measles, malarial fever and leprosy. Physical injury; ideas of greatness; insomnia; visual and auditory hallucinations. Changeable temper; expression gay; fibrillary tremors of the tongue and the digital extremities; abolition of the plantar reflex and slowness of the cremaster reflex."

Information of the Section: "Father living. Two brothers, one with leprosy. Indulges in alcoholic drinks. Euphoric physiognomy. Small stature; muscular atrophy of upper limbs, Duchenne-Aran type. Loss of phalanges, ears thin. Cranio-facial asymmetry; prognatism of lower jaw; slight fibrillary tremor of tongue; teeth irregular and bad; incisives lacking. Ulceration of nasal septum. Extended patches of discoloration of the skin on the trunk and the lower limbs. Circulatory apparatus, normal. Respiratory apparatus, normal. Other organs more or less normal. Zones of anesthesia corresponding to the leprous spots. Tactile and thermic sense present everywhere outside of the spots. Walk slow, tremor of hand in extension. Has never had convulsions. Patellar reflex normal. Retarded plantar and cremasteric reflexes. Nutrition good. He sleeps and eats well. Has no idea of time and place. A certain degree of mental confusion. Temper unstable. Hallucinations of sight and hearing. Unsystematized, delirious ideas. Amnesia of recent and ancient facts. Low intellectual level. Speech a little dragging."

Combining the mental troubles—that is, confusion, dysmnnesia, lack of orientation, slightly delirious ideas—I was compelled to classify the case among the infectious psychoses of chronic evolution, and the symptoms presented easily justified the diagnosis.

We see by this exposé that the authors to-day have not uniform opinions on the question of leprous psychoses. Prof. Juliano Moreira closes one of his articles as follows:

"The leprous infection has no special form. By coincidence, though not very often, the greater number of forms of mental alienation have been observed. The complications usually seen in leprosy (tuberculosis, streptococcic infection, etc.) may cause the appearance of psychoses in the leprous. The mental state of lepers changes much according to the hereditary antecedents and the education of each one."

While accepting the conclusions of the distinguished leprologist and psychiatrist, I nevertheless think that leprosy itself may cause a psychosis of infectious type. In this line, Meschede publishes one case of acute hallucinatory delirium; Orbeli, two cases of amentia. Juliano Moreira classifies the second of his observations, whose symptomatology resembles that of infectious delirium, as a delirious episode. M. Franco da Rocha's third case begins with the acute

types: "The patient had visual hallucinations, motor agitation, ideas of grandeur, of an absurd aspect, and at the same time manifested an evident state of confusion." The diagnosis, on account of the state of dementia and the absurd delirium of grandeur, was that of paranoid dementia and mutilating leprosy.

According to me, the case little resembles paranoid dementia. In the beginning it was an acute psychosis, amentia type. Later it was a permanent state of dementia.

My case recalls exactly the type of infectious psychoses. I believe lepers may present an acute hallucinatory delirium, amentia; in a word, an acute psychosis with consecutive confusion and dementia. In my patient, for instance, there was a delirious episode with great agitation, and, although the mental agitation improved, death ensued. Since, in these cases, confusion and other mental states may be observed, listed by authors in the group of infectious psychoses, I believe I can conclude that a leprous psychosis exists. The reasons are clear: on one side, clinical observation; on the other, leprosy is a chronic infection, and, as such, may produce psychoses, as do tuberculosis, syphilis, sleeping sickness, ankylostomiasis, etc. This does not prevent a leper from presenting other mental perturbations independent of infection—depressive maniac insanity, general paralysis, senile dementia, etc. Leprous psychoses proper must be rare.

BERIBERI.—This disease is included in the group of infections by several tropicalists like Scheube, Bälz, Manson; the Brazilian authors consider beriberi a syndrome of polyneuritis, which may be either toxic, alimentary or infectious. (M. Conto.) The mental perturbations following are of the Korsakoff syndrome type. Nina Rodrigues, among us, has made special studies; Juliano Moreira and Afranio Peixoto discussed the same subject in their report to the Amsterdam Congress of Psychiatry and Neurology. Prof. Erico Coelho, it seems, was the first to take up the question in a treatise on "A Few Observations on Beriberi Examined from a Psychologic Viewpoint," presented to the Academy of Medicine of Brazil in May, 1886. He calls attention to the psychic disorders of subjects of beriberi, although Silva Lima had already cited troubles of memory in 1872.

Later I shall speak of what I observed at the beriberi hospital, in a few cases of beriberi at the insane hospital, and in my private practice.

Statistics published by M. H. Roxo show that, up to that time, seven cases were entered as beriberic psychoses at the pavillion of observation of the psychiatric clinic.

Prof. Nina Rodrigues, of Bahia, as I have already said, studied the question more in detail and outlined a clinical classification after having verified, from the works of the Brazilian physicians, the existence of mental confusion in the beriberic. In fact, he described three principal forms: Amnesic, which should be called dysnesic; the delirious form, and the confused form. According to Moreira and Peixoto, "from the cases they have studied and the reading of the observations of the regretted professor quoted above, the delirious and confused forms are clearly dependent on a psychic state anterior to the beriberi." These two authors close with a definite doubt as to the existence of mental perturbations in beriberi.

On my part, I accept the psychoses of beriberi for theoretic and clinical reasons. Be it intoxication or infection, beriberi is capable of producing mental troubles; clinical observation, on the other hand, records psychic disturbances occurring in cases of beriberi. I believe even that every beriberic has elementary mental perturbations. Memory cenesthesia, the temper, are frequently altered. The acute cases are the most evident. Sometimes toxic deliriums, coma vigil, various auditory and visual hallucinations complicate the picture of acute beriberi. Besides the mental perturbations of a chaotic type, from cerebral torpor to confirmed mental confusion, I have observed in chronic beriberi a state of pronounced nervousity, a neurasthenic state, hysteroid conditions, depending, it is true, on the soil and chronic intoxication.

The mental perturbation proper of beriberi, such as we have, are of the type of Korsakoff. In fact, in kake, alterations of memory have a preponderating place, either anterograde or retrograde dysmnnesia, or both, are observed.

Frequent illusions and a few hallucinations, allo- and hetero-psychic desorientation, and an indifferent temper, constitute the general clinical picture of beriberi. I must specially call your attention to the fact that these perturbations are latent. The patients seem mentally sound. Persistence in the investigations and variety in the manner of observing often demonstrate the *latent perturbations* above mentioned. This is why I have said that the elementary psychic alterations are much more frequent

than they seem and that a large number of beriberics have psychic perturbations, either elementary or latent.

In the beriberic psychoses, the prognosis is favorable, although their evolution is long. Exceptionally the patients end with a definite psychic weakness, a terminal dementia.

The treatment must aim at the disintoxication of the organism and the general stimulation of the nervous system.

An example of the psychosis of beriberi is given below in an observation from the psychiatric clinic of the Faculty of Medicine, service of Prof. Roxo:

Soph., white female, 40 years old, Brazilian, was admitted January 29, 1909, and left on February 18 of the same year. Normal constitution. Dynamometer, right side—6—(pressure scale). Skin and mucous membranes pale. Weight at entrance, 43 (kilos); at departure, 45 (kilos).

Digestive apparatus—Tongue slightly coated; liver enlarged and painful, both spontaneously and on pressure; dyspepsia.

Genito-urinary apparatus—First menstruation at 14; has never had a miscarriage; five normal labors. Urinalysis showed low density and a trace of indican. Otherwise normal.

Respiratory apparatus—Normal.

Circulatory apparatus—Tachycardia (94 pulsations). Cardio-pulmonary murmur in the preinfundibular region.

Motility—Walking without assistance is extremely difficult; there is paresis of the lower limbs, with a certain degree of muscular atrophy.

Sensation—The patient complains of pain in the "bones," in the "flesh," in the "articulations," besides a distressing numbness. Plantar numbness is so pronounced that the patient does not feel the ground accurately as she walks. Zones of anesthesia in the lower limbs.

Reflexes—Patellar and Achilles abolished; cutaneous plantar present; abdominal diminished; pupillary present.

Psychic Examination—She claims not to have any psychopathic relatives. Besides eruptive fevers as a child, she had malaria in adult life.

The patient seems sad, crying once when relating her sufferings, contradicts herself, manifesting a tardy and difficult ideation, besides dysmnnesia for recent happenings. Her "general weakness" increased a month ago, at the time of her last menses, which came in very small quantity and lasted only one day. She then sent for her physician, Dr. C. L., "who had been treating her beriberi a long time."

Her affectibility remains undisturbed. She relates hearing in her sleep the song she habitually sings; at other times, still in her dreams, she has the sensation that she is being carried up in the air, that she floats in space "as if she had no weight." Also elementary visual hallucinations are noted. The patient progressively improved until the day of her discharge. This is the type of oniric delirium of Regis.

ANKYLOSTOMYASIS.—At the second Latin-American Medical Congress, meeting in Montevideo, Dr. Gotuzzo and I presented a communication upon the existence of mental troubles in un-

cinariasis. It was known from the classical authors of the last century, like Esquirol, that the intestinal worms were responsible for certain mental perturbations. "The helminthic psychoses are very rare and are seen in young myopragics of the nervous system. While these troubles are rare, the *tenias*, *ascarides*, *oxyurias* may produce mental disorders in individuals with a neuropathic taint."

The major psychic changes that may be observed during the course of ankylostomyiasis have not yet been described at the date of our communication. I am not speaking of slight changes of temper, nor of disorders of taste and appetite, the perversion of which may lead to the greatest extravagances imaginable and which are demonstrated by elementary psychic perturbations.

In 1906, at the National Hospital for the Insane, I had occasion to observe with, Dr. Gotuzzo, three cases of uncinariasis accompanied by pronounced psychic changes, and one could not help noticing the relation of cause to effect. The observations are described in the original report quoted. The first observation related to a case of uncinariasis, *psychic degeneration, a delirious spell with hypochondriac ideas of persecution*. In the second case there was *ankylostomyiasis, inferior degeneration, dysmnēsia, incoherent delirium*. In the third we observed uncinariasis *with inferior degeneration and pronounced mental confusion*.

In the three cases quoted, it seemed to us that ankylostomyiasis was the proximate cause of the mental derangement. The proof: first, the evolution of the disease, as the essential habitual symptoms of the infestation disappeared the psychic changes improved. The parallelism was so evident that it seemed schematic. Second, the kind of delirium in the case quoted by me: symptoms common in uncinariasis, such as pain in the stomach and head, dyspnea, etc., were interpreted by the patient as manifestations of poisoning by certain poisons; in other words, the patient built the hypochondriac and persecutory delirium on his cenesthenic disorders.

We must not be surprised that in some individuals uncinariasis should awaken mental disorders. We know, since Lussani, that ankylostomyiasis secretes several toxic substances which, when introduced into the circulatory current, spread into the liquid atmosphere, wherein all of our anatomic elements live, and which is constituted by our internal centre.

To the toxic substances secreted by the parasite, it is necessary to add the poisons resulting from the action of these substances

upon all the tissues, which action has been studied especially on the elements of the blood. Carried, then in contact with the psychic cerebral cells, they will necessarily alter their metabolism; if by heredity or by acquirement these cells are myopragic—that is, if they belong to a predisposed or degenerate individual—it is not surprising that these alterations of metabolism should be transformed into delirium or other mental disorders.

At the time of my first communication to the National Academy of Medicine regarding uncinariatic psychosis, I spoke of uncinariatic infantilism.

Profs. Juliano Moreira and Afranio Peixoto, in the report on “Mental Diseases in Tropical Climates,” presented to the Congress of Lisbon, show that ankylostomyiasis is a cause of psychic deficit in the descendants of former uncinariatics, “the descendants of these patients are frequently imbecile or mentally weak, without any other cause having united to produce such a result.”

My personal researches show that mental debility and a lowering of the intellectual level are very frequent, but imbecility has seemed rare.

We shall end the original report on this subject as follows: Ankylostomyiasis must be considered as an exciting cause of dysphrenia. The mental perturbations brought on by ankylostomyiasis are of two kinds: the ones described long ago, although otherwise interpreted, are very frequent and ordinarily not intense; these are changes in the character of the appetite and of taste, spoken of by the authors; the others, not previously noted, are much less frequent, but more intense, and in the form of serious mental syndromes.

The appearance of these perturbations depend: (a) On a predisposing cause—degeneration (b) of an exciting cause: uncinariasis.

The pathogeny is explained by the intoxication and the exhaustion shown by ankylostomyiasis. Anti-parasitic treatment may cause these mental perturbations to disappear.

Filariasis seems to me as an infestation capable of producing dysphrenia. I know of no description of such.

Grave somatic perturbations are observed in filariasis. According to Manson, the lesions which may be attributed to nocturnal filaria are: abscesses; lymphangitis; lymphadenitis; axillary adenitis; orchitis, etc. Of these troubles, several are febrile, infectious. There must be mental troubles with delirium of the

febrile or infectious type. There may even exist psychic perturbations specially depending upon filaria. This is a simple hypothesis, the verification of which will depend on future observation.

CYSTICERCOSIS.—The authors state that cerebral cysticerci may remain unobserved and quiescent, as in the case seen by Prof. Couto and myself; or they may provoke disorders of the type of *amentia*, at times awakening a state of depression, simulating the lypemania of the ancient writers, at others hysteria, followed or not by convulsions, giving the symptomatology of cerebral tumors. The cases seen at the hospital for the insane bore the diagnosis of alcoholism, hysteria, etc. Human cysticercosis was demonstrated at autopsy.

The pathogeny of the manifestations is toxic and not from compression, as it might seem at first sight.

CONCLUSIONS.

- I. Infections cause psychoses, as is claimed by all authors.
 - II. Tropical diseases are not exceptions to the rule. The lack of published observations is responsible for the apparent absence of psychoses in tropical diseases.
 - III. Tropical infections or infestations present the same clinical features as other infections.
 - IV. The acute febrile infections, such as yellow fever, plague, malaria, etc., furnish types of febrile delirium, of infectious delirium, of post-infectious psychic weakness, of the delirium of collapse and *amentia*.
 - V. Infections with a chronic evolution, such as leprosy and sleeping sickness, rarely present mental troubles due to the initial infection.
 - VI. Intestinal and blood worms cause dysphrenia. *Uncinariasis* seems to me to be an element in the production of psychoses. *Filariasis* must be likewise.
 - VII. Sleeping sickness (*trypanomyiasis*) produces psychic disturbances.
 - VIII. *Beriberi* should be considered as a syndrome, nearly always of chronic evolution. The psychic disturbances generally exhibit the Korsakoff type. *Latent and elementary mental perturbations* are frequent, according to my view.
 - IX. Cerebral cysticercosis determines psychic modifications similar to those of cerebral tumors. Its pathogeny is of toxic origin.
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THE LATRODECTUS MACTANS AND THE GLIPTO-CRANIUM GASTERACANTHOIDES IN THE DEPARTMENT OF AREQUIPA, PERU.*

By DR. E. ESCOMEL, Arequipa, Peru.

(Translated for the JOURNAL by Dr. A. McShane, Greenwood, Miss.)

Tradition has long preserved the memory of individuals injured, or even killed, by bites of poisonous animals, sometimes said to be spiders, sometimes scorpions, or occasionally a small saurian, the *Phyllodactylus gerrophigus*, popularly called the *salamanqueja*, to which a high degree of poisonous properties has been ascribed.

Frequently we hear of people having been made ill, or killed, by the bite of another spider, the *Gliptocranium gasteracanthoides*, commonly known as the "pruning-spider," because it hides on the under side of the vine-leaves, and bites the hand of the farmer while he is in the act of pruning in the vineyards of our valleys, particularly the valley of Majes.

In 1913, in the middle of that series of scientific studies which France furnishes us, giving them to us unreservedly even now, while struggling under the strain of a great war, we sent an entire nest of an arachnid which Dr. P. Lesne, of the Section of Entomology of the Museum of Natural History in Paris, characterized as probably the *Latrodectus mactans*, Fabr, which was subsequently confirmed.

Lately, we had the pleasure of sending to the eminent Argentine specialist, Dr. B. Houssay, a number of specimens, some living, some dead, of the *Araña podadora* (pruning-spider), which were identified by Dr. J. Carbonell, of Buenos Ayres, as the *Gliptocranium gasteracanthoides* of Nicolet.

The *lucacha*, a poisonous spider of Central Peru, studied by Dr. Leon, of Lima, has lately been identified by Dr. Cornelio Guzman, of Santiago de Chile, as the *Latrodectus formidabilis* of southern Peru.

LATRODECTUS MACTANS (Fig. 1 Page 539).

This arachnid is widely distributed over the globe. It is characterized in a special manner by the red spots which almost surround the anal orifice; and it is precisely this feature that has singularly attracted the attention of the majority of the countries in which

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it is found, as is shown by the various names which have been given to it. Thus, the Malagassies call it *menabodi*—that is, “cul rouge” (*red rump*); the Santo Domingans call it by the same name, and the Chileans give a similar appellation to their *Latrodectus*.

It has been found in North and South America, Europe, Africa, Oceania and, as time advances, it is reported from still other localities.

In Argentine, Drs. Penna, Aguilar, Sommer, Greco, Houssay and some others have specially described this arachnid, and in all of its biological relations. In Chile, Puga Borne, Guzman, Bolilier, Cruzat, Crosi and others have fully studied the *Latrodectus*. Puga Borne established the similarity that exists between the *malmignata* of Italy, the *karakurt* of Russia, the *katipo* of New Zealand, the *menabodi* of Madagascar, the *cul rouge* of Santo Domingo, the *pallu* or *guina* of Chile, the *mico* of Bolivia, the *lucacha* of Peru (studied by Dr. Leon), the *araña naranja* (orange-spider) of the Antilles, and the *Latrodectus* of North America.

ZOOLOGICAL CHARACTERS.

The *Latrodectus mactans* belongs to the order of spiders, family Teridideæ, genus *Latrodectus*. The cephalothorax is oblong and oval, cephalic region narrow, the eyes on two equidistant parallel lines.

The species under consideration is of a deep black color, with vermilion-red spots on the abdomen. The cephalothorax measures from two and one-half to three millimetres from before backwards. There is a V-shaped groove in the part that surrounds the eyes, and another (transverse) groove in the posterior part. The lip is triangular and strong, the mandibles resting on the lip, which is ebony-colored. The abdomen is globular, ovoid, black, measures from seven to ten millimetres in length, and is characterized by the bright red spots which dot it.

On the back, and also on the anterior part of the abdomen, there are two linear or angular spots, separated by the median line. Behind the former we sometimes perceive the remains or traces of an oblique linear spot on the back of the abdomen, scarcely perceptible. Also, we see a large spot which, from being large in the middle of the dorsum of the abdomen, gradually narrows in size as it approaches the lateral surface of the abdomen. Further, there

is a small median, rhomboidal, or arrow-headed spot, which continues along the median line of the abdominal dorsum towards the margin of the anus. Along this path there is usually a slight widening, followed by a narrowing, and again a widening which ends abruptly at the anal margin.

On the inferior surface of the abdomen there is an hourglass-shaped spot, one or one and one-half millimetres long, narrowed by a constricting belt in the middle. It ends in a widened spot at the anal margin, inferiorly, so that the anal orifice is red only in its superior and inferior limiting parts. These spots assume various forms according to the degree of development of the arachnid. The legs are fine and black; those of the first pair measure approximately seventeen millimetres, and are the longest; those of the second pair are twelve millimetres long; the third are the shortest, measuring only nine millimetres, while the last pair are fifteen millimetres in length.

We have found the *Latrodectus* in the country districts of Arequipa as well as in the city, being less frequent in the latter. It prefers dry places, and feeds on insects, especially coleoptera.

Our studies of the *Latrodectus* have chiefly been carried on at Hunter Hill, in Tingo. In some places, where the ground is soft, this spider builds its nest in deep holes, concealing the entrance with webbing and network that deceive and catch the insects on which it feeds.

Ascending the hill, we begin to find the spider at a height of forty or fifty meters easily and in great numbers. Among the *pigmy cacti*, above the level where the *Encelia canescens* and the *Licoporsicum peruvianum* thrive, the presence of the *Latrodectus* is revealed by a newly woven web with few meshes. In the neighborhood of this web the true nest of the *Latrodectus* is found among the rocks, and frequently under a rock. This nest is disclosed by an adhering group of the cadavers of insects, held together by the web, which serve as food to the spider. The spider is found close to his prey, or inside his web, and can easily be discovered, either through the vivid red color on an ebony background, or by his mobility, which is very great, enabling him to hunt his prey with great facility.

When the spider is grabbed with the forceps he defends himself by biting and expelling a greenish liquid from his mouth. At the same time, his anus expels another liquid, clearer than the first,

and of a bluish color. If it meet another *Latrodectus* in captivity it immediately begins a mortal combat. We have always found the *Latrodectus* solitary; the female is the one that survives, for, just as soon as she has been fertilized by the male, she attacks him and devours him, according to some writers.

In some nests of *Latrodectus* we have found from one to four pouches of ovules of the animal. There are numerous eggs in each pouch, varying in size from the head of a pin up, and of a pale, transparent violet color.

There are other species of *Latrodectus* that nest among the cacti, not covered by the rock, but well concealed by twigs which completely cover the group of cadavers of insects, leaving the web that serves as a door very fresh-looking and clear of them.

The insects most frequently found are coleoptera, and among these the *Tenebrionider* of the genus *Philorea*: the *P. setipennis*, and the *P. Escomeli* of Lesne, the *Pseudomdoe humeralis* less frequently; and some orthoptera, acridea, like the *Pachitylus migratorius*, but the most numerous victims are the *Philoreæ*.

As soon as one of these insects is caught in the web it is attacked by the *Latrodectus*, which, biting it between the head and the thorax, or between the thorax and the abdomen (because the thorax itself is very resistant), kills it in an instant and carries it to his hidden nest, where he wraps it or covers it with great care in order to add it to his reserve supply of food. He is distinguished from the *Latrodectus variegatus*, because the spots on the latter are not so red. The same applies to the *Latrodectus thoracicus*, which has a yellow cincture and polychrome abdominal spots.

THORACIC ACTION OF THE POISON.

The poison gives rise to general as well as local disturbances. Drs. Puga Borne and Guzman described these symptoms very minutely, which the eminent director of the National Bureau of Hygiene of Buenos Ayres, Dr. Penna, in 1894, compared to the grave accidents usually occasioned by yellow fever.

GENERAL SYMPTOMS.

Dr. Guzman writes as follows:

“The presence in the human organism of the poison of the *Latrodectus*, introduced by the insect itself into the circulatory system, produces a combination of serious disturbances of innervation, secretion and

heat-production. In an interval varying from a few minutes to two or three hours after the bite of the insect, the explosion of the symptoms of toxemia takes place.

“The individual who has been bitten a few moments before, many times without perceiving it, suddenly sees himself overcome by symptoms that upset him completely. Muscular strength rapidly diminishes, and mental depression quickly reduces the victim to inaction; a strange, violent pain invades all of his organs, and causes him to break out into groans and lamentations, without giving him a moment of relief. This pain is most intense in the brain, spinal cord and the muscles; the tremor sometimes develops into local convulsions; the suffering makes sleep impossible; the mind is clouded, and delirium sets in, with horrifying hallucinations which manifest themselves by incoherent complaints and an impulse to flee or to defend one’s self against violence, which is difficult to control; the animal heat leaves the body, causing a fall in temperature of a degree (C.) or more; the heart beats at irregular intervals; an edematous swelling invades the entire skin, and distorts the countenance so that the individual is no longer recognizable; a cold, clammy sweat, which gathers in droplets and runs down, covers the entire body, principally the trunk; the urine is diminished or suppressed; the bladder ceases to function, and, in spite of great efforts, the patient is unable to urinate, and suffers the pain of retention. The cries of pain which are forced out of the patient dominate the scene. The symptoms moderate in a few hours, returning the same day and following days. In cases that terminate favorably, which are the only kind I have seen, each one of these exacerbations is less than the previous one, until they completely disappear; the pains cease, the sweating stops, and all the functions are restored, and the patient enters on a period of convalescence marked by extreme muscular and mental weakness, by difficulty in walking, by cutaneous eruptions (sudamina or morbilli), and by a great desquamation of the skin. The exceptional cases, in which death ends the scene, show a constant aggravation of the above symptoms; later, various paralyses occur, lowering of the temperature to a point incompatible with life, though sometimes, on the contrary, the temperature rises enormously. Death may occur, in other cases, even after the grave symptoms have disappeared, on account of the profound debility to which the organism has been reduced.”

Dr. Perma says this:

“As my former pupil, Dr. Delio Aguilar, stated, I have taught in my lectures since 1894 my ideas concerning the pathologic action of the poison of certain arachnids. The Board of Public Benevolence sent to the Isolation Hospital, of which I was director, a patient diagnosed as ‘suspicious’ of yellow fever, in regard to which I was called on to give an official opinion to that institution, so that appropriate prophylactic measures could be instituted. The patient was a young Italian shoemaker, who had long resided in Buenos Ayres. He and another Italian occupied a wooden annex on the roof (azotea) of the building. His previous history was devoid of interest. His latest illness began brusquely in the following manner: A moment after having laid down to sleep one night he felt a pricking sensation at the level of the lower third of the left

thigh, and as soon as he got up to investigate he felt a similar sensation on the left side of the thorax, whence he drew forth with his fingers an insect, which proved to be one of the numerous spiders that infested his home. In consequence of this little accident a disease was ushered in, the details of which can be seen in my Clinical Lectures in the chapter on the Diagnosis of Yellow Fever, and which was principally characterized by hemoglobinuria, which developed in a few hours; fever, marked hematogenous jaundice, profound depression, anemia, rapid pulse, and, at the points of puncture, two spots of a peculiar ecchymotic aspect, slightly infiltrated, with small vesicles in the center, and presenting the paradoxical phenomena of an exaggerated spontaneous sensibility (which called for the use of morphin), associated with an anesthesia for pain, as shown by pin-pricks over the affected sites. The temperature was elevated; and, if my memory serve me aright, I believe it was towards the evening of the third day of the attack the fever declined, and the improvement of the patient was so evident that, being still dubious about the etiology furnished by the patient (but which was confirmed by Dr. Ricardo Lopez), I asked myself if this curious symptomatic defervescence were not really the period called the improvement of death (*mejoria de la muerte*), which, in genuine yellow fever, usually precedes the fatal termination. Now, this patient was imbued, like many of the Italians, with the beliefs and superstitions of Apulia, where the people religiously preserve the tradition of the effects of the tarantula (spider); and when he reached this lucid interval in his attack he did not fail to speak of his profound terror of the spider that caused his disease. Such was the condition of the patient, whose organs showed nothing abnormal and of whom I had to express myself officially.

"If yellow fever were entirely lacking in the cutaneous manifestations above alluded to, and which reached a gangrenous stage, the slightly abnormal evolution of the symptoms would immediately have made me eliminate it from the diagnosis. But it so happens that in yellow fever, as in smallpox, carbuncle, plague, these circumscribed cutaneous manifestations, necrotic in character, may occur, which the French writers call *charbons*, true carbuncles which specialize most constantly and most frequently in the disease to which they have given a name (*charbon*). In spite of this, I was convinced that we really were dealing with a case of poisoning caused by the bite of a spider, and I reported accordingly.

"The patient became worse on the following day, and died a day or two after.

"The autopsy showed that the liver was healthy; the cystic duct was somewhat constricted; all the other organs were normal, except the kidneys, which were enlarged and congested, and in which the microscope revealed that the involuted tubules, as well as the glomeruli, were filled to a great extent with cylinders formed of altered red blood corpuscles molded into cylinders, such as we usually find in relapsing hemoglobinuria."

Dr. Houssay presented excellent works to the Medical Congress of Buenos Ayres in 1916, which have not yet been published.

LOCAL SYMPTOMS.

In Arequipa, Dr. Hunter has observed several cases of cutaneous phlegmons, with central gangrene and marked general symptoms,

which were ascribed to some kind of a bite, though the patient, usually from the country, did not know precisely what animal caused it. Inasmuch as these patients lived in regions infested with the *Latrodectus*, without any other poisonous animals, it is indisputable that this arachnid was the causative agent of the lesions, which agree very minutely with the cutaneous lesions described by Dr. Guzman in his monograph.

These cases comprise: (1) A woman who was bitten on the inner aspect of the thigh, and who, after suffering with general symptoms for several hours, developed a phlegmon which ended in an immense sphacelus, even exposing the muscles, and cicatrizing very slowly. (2) A man who was bitten in the axillary region, suffered from local hyperalgia, somnolence and fever, phlogosis ending also in deep sphacelus exposing the muscles, and cicatrization very slowly.

First Personal Case.—The writer himself has seen a boy of fourteen, who was bitten by a black spider, with red spots (this is the only arachnid with these characters described in country districts of Arequipa), which was no other than the *Latrodectus mactans*. The boy was bitten in the submental region of the neck.

The patient felt a stinging pain in the place mentioned, while reclining in the fields. He caught the spider and killed it, and examined it leisurely afterwards.

Ammonia was applied locally, and ammoniated drinks were administered.

The general symptoms of arachnidism were very marked; but in twenty-four hours he was able to go out, though presenting an enormous edema of the neck, which threatened to extend to the thorax.

At the site of inoculation there were two small, dark spots, corresponding to the two fangs that led to the poison-glands of the spider.

The boy's face was directed upwards; deglutition was somewhat difficult; the voice was husky, the general state depressed, and the urine was strongly hemoglobinuric.

I prescribed local applications every two hours to the edematous zone with a saturated aqueous solution of permanganate of potash; after the solution had dried, the surface was covered with ouatoplasm of Langlebert. Internally, I ordered a teaspoonful of a

solution of permanganate (1 to 4,000) every three hours. Milk diet.

At the end of three days the patient was greatly improved; no sphacelation occurred.

Second Personal Case.—Recently, a child of eight years was brought to me with the left foot and leg in a state of enormous phlogosis. The swelling was so extreme that the foot was held in complete extension, with the toes in abduction, because their respective bases spread out.

In the anterior part of the tibio-tarsal articulation small spots were observed, symptomatic of the spider-bite.

The edema extended above the knee. The general symptoms were very grave: somnolence and profound weakness. Temperature, 39.5° Cent.; general and local painful hyperexcitability; absolute anorexia; polydypsia; scanty urine (none was brought for analysis).

Painting every two hours with a saturated solution of permanganate of potash over the swollen foot and leg, and for one centimeter beyond the edematous region, and a potion of permanganate (1 to 4,000) in teaspoonful doses every two hours. Under this treatment the child recovered in three days; there remained only a little edema, which entirely disappeared in two days more under the application of the permanganate solution three times a day, *without giving rise to the escharotic formation so frequently observed in the bites of the Latrodectus.*

Third Personal Case.—Servant, 19 years of age, from a region abounding in Latrodecti, between Tingo and Tingo Grande.

She consulted me two days after edema began in her right hand, extending rapidly to the elbows. She did not remember having suffered from the bite of any insect; nevertheless, we saw very plainly the points at which she had been inoculated.

The general symptoms of arachnidism were fairly well marked. As in the other cases, the face was swollen, the gaze was vacant, walking was tremulous, the adynamia profound. The hand and forearm had all the signs of serious, diffuse, deep phlegmon. The urine was high-colored.

Notwithstanding the long time that had elapsed since the beginning of the phlegmon, the usual topical applications of a saturated solution of permanganate were made; internally, collargol and diffusible stimulants were given, with a rigorous milk diet.

We had the pleasure of seeing the phlegmonous symptoms

gradually fade, so that in a few days she could move her hand freely. All the local and general lesions disappeared without having caused any gangrenous symptoms like those in previous cases. I saw the patient from time to time, until the manual functions were completely restored.

These are the three cases that came under my personal observation, and which, by the multiple and symmetrical punctures, can not be confused with those caused by other insects provided with a lancet-shaped proboscis, like the hymenoptera or the scorpion, which thrives sometimes in the fields.

It is not necessary to speak here of the *Phyllodactylus*, the bite of which leaves very different traces; nor of the vipers, which do not exist in the rural districts of Arequipa.

TREATMENT.

A supersaturated aqueous solution of permanganate of potash is the remedy to which we owe very valuable services in all of our cases. Not only has it served to combat the bites of poisonous animals, but also in all of the bacterial invasions of the skin, in chronic intrauterine lesions, and in the indurations that follow hypodermic injections.

Its deep, penetrating action through the skin, although not widely known, is notable, being superior to that of iodine.

Its oxidizing, antiptomainic, antiseptic power is ample and harmless. I recommend it enthusiastically, for its employment, simple and easy everywhere, can render invaluable services.

I have used it in erysipelas or active febrile microbial dermatitis topically every two hours, in saturated solution, decreasing the applications as the patient improved. Internally, the permanganate was given in a weak solution (1 to 4,000), in doses of one tablespoonful every two hours. Usually, an exclusive milk diet was given, and diuretics for the elimination of the toxic material, with ammoniacal stimulants and tonics in cases of profound adynamia.

Having called attention to these facts, I believe that the verification of the lesions caused by the bites of the *Latrodectus* will become more frequent in Arequipa, since I feel sure that some of the edematous, febrile and gangrenous lesions found among the country folk will be traced to the poison of the arachnid rather than to a bacterial inoculation.

THE GLIPTOCRANIUM GASTERACANTHOIDES OR PRUNING SPIDER.
(Figure 2.)

This arachnid, known for a long time in our vine-clad valleys under the name of *pruning spider*, because it makes its effects felt in a particular manner at pruning-time, has been traditionally de-



1. *Latrodectus Formidabilis*.
2. *Gliptocranium Gasteracanthoides*.

scribed by the vineyardists on account of its bite, which occasionally caused the death of the individual bitten.

The earthy color of the arachnid, and the construction of its webs on the under side of the leaves, make it particularly dangerous, not so much on account of its agility, which is not very great, being sluggish, rather, as on account of the circumstance that the hand of the pruner, being under the leaf, might press it and cause it to bite and inoculate the workman.

When the spider is on the ground, under the fallen leaves, it is accustomed to bite the bare foot of the farmer when it comes within reach.

So great is the terror inspired by this spider that a husbandman, feeling that he had been bitten on a finger by the animal, immediately cut off the finger entirely, and that, too, with the same scissors he had used in pruning.

Various writers have described parasites in different vine-growing valleys of Arequipa (Vitor, Majes, Siguda, Camana, etc.), but they are most frequent in Majes. I wish here to express my thanks to Señores Belaunde and Romaña, who sent me a number of specimens; also to Dr. Bedregal Delgado, who, besides sending me specimens, also furnished the clinical data which I offer in this paper, since it is extremely rare for any patients bitten by the *Gliptocranium* to come to Arequipa for treatment.

ZOOLOGICAL STUDY.

The cephalothorax, coriaceous, hard, trapezoidal, literally covered with black tubercles, visible under a low power, the apices of which are of a clear yellow color. The anterior part, which holds the eyes, is narrower than the posterior. It measures three or four millimeters in length. The eyes are above the tubercles; the legs are black and spotted: the first pair is very long, next in length is the second pair; the fourth pair is the longest, and the third pair the shortest.

The abdomen is enormous, globular, measuring ten millimeters in length, twelve millimeters wide, and seven high. It has small hairs in its anterior part, is smoother posteriorly than on the belly. Its color is ashy-grey in the adult state, whereas it is yellowish in early life. It has an anterior-posterior ridge, and at the junction of the anterior fourth with the posterior three-fourths in the most prominent zone two obtuse tubercles arise, separated from each other by a space of five or six millimeters. Each tubercle is rounded at its vertex, is two millimeters long, and is directed forward and upward. It is of the same ashy-grey color as the abdomen.

SYMPTOMATOLOGY.

The symptoms of arachnidism presented by victims of the bite of the *Gliptocranium* are similar to those produced by the *Latrodectus*, only they are more intense. The effects are general and local.

The local symptoms begin as a reddish papule shortly after the bite, rapidly invading the skin, the subcutaneous cellular tissue, and the neighboring organs. In twenty-four hours the lesion assumes the typical aspect of a diffuse phlegmon; in forty-eight or fifty hours sphacelation begins, and may become very extensive, as in a case treated by Dr. Bedregal, in which a small child, bitten by the spider in the anterior region of the neck, presented, at the end of seven days, the muscles exposed to view, after the separation of a mortified cellular cutaneous mass. This patient died nine days after having been bitten.

The general symptoms are marked by a nervous stupor, which begins as soon as the patients see themselves bitten by the animal; later there is nervous exhaustion, local pain, general depression,

very high fever, rapid pulse, rapid breathing, and a *hematuria*. This last symptom is the one that most forcibly arrests the attention of the patient, and is the one which they most frequently relate.

In some individuals these general symptoms become aggravated so rapidly that in a few hours coma sets in, ending in death. This termination, however, is the exception and not the rule; still, a sufficient number of fatal cases have been recorded to make this arachnid an animal traditionally feared in our valleys.

TREATMENT.

Since physicians are few in number in the valleys mentioned, we are forced to content ourselves with instructing the planters (*haciendados*) in the therapeutic technic that they should follow in the case of a bite of the *Gliptocranium*. We recommend the employment of permanganate of potash internally and externally, as in *Latrodictus* poisoning. This can be readily applied by the peons themselves, since they can carry some permanganate with them and make a solution with any accessible water, since it is not necessary to have sterile water, for the permanganate sterilizes any water in which it is dissolved.

It is also recommended to suck the poison out of the wound with the mouth, when the bitten place is accessible, to use dry-cupping, or scarifications in the region when it is possible to do so; and the application of a ligature (or bandage) above the bite to prevent generalization of the poison by the blood-stream.

Internally, diffusible stimulants and tonics, such as quinin, kalo, caffeine, should be used, and a strict milk diet should be followed; also, diuretics. Adrenalin and chlorid of calcium might be used as hemostatics in hematuria when the hemorrhages are profuse. This treatment has given good results on the haciendas where it has been employed. Dr. Bedragel, during his brief residence in Majes Valley, treated six patients. One of these was the child already mentioned, that died in nine days, and five cases in adults, who presented themselves with clearly marked characteristics of arachnidism, which were treated by sucking the wound or by dry-cupping; locally, swabbing with tincture of iodine (15 per cent), and applications of Langlebert's autoplasm, soaked with a 10 per cent aqueous solution of chlorid of lime. Internally, a saline purgative was administered, followed by acetate of ammonia and benzoate of soda. All five of these patients recovered in a few days.

The foregoing remarks open the way to new problems and new improvements, particularly in the elaboration of new serums, on the order of Calmette's for snake-bites, since there are many patients in our towns and valleys who should be treated promptly and adequately in order to prevent sphacelation and subsequent cicatricial mutilation, saving them from weary months of illness, if not even saving the lives of the victims. The prompt use of a suitable serum should all the more be encouraged, since, in our sparsely populated country, the day-laborers represent energies that should always be preserved when possible.

Apart from the thesis of Dr. Leon on Lucacha, I know of no work that, up to the present time, has dealt with the subject in a scientifically concrete form.

CONCLUSIONS.

1. The *Latrodectus mactans* and the *Gliptocranium gasteracanthoides* are two dangerous arachnids that exist in southern Peru.
 2. Their bite has caused cases of arachnidism with local and general symptoms, resulting sometimes in death.
 3. The treatment with permanganate of potash, internally and externally, is the one that has given the best results.
 4. The popularization of the study of these and other poisonous spiders of the country should be encouraged, so as to destroy them and head off their bites, and also to hasten the day when a curative serum of proved efficacy shall be elaborated.
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MEDICAL SECTION, LOUISIANA STATE COMMITTEE OF NATIONAL DEFENSE.

(P. O. Box 778, New Orleans, La).

BULLETIN III.

“To the Judge of Right and Wrong
With Whom fulfilment lies
Our purpose and our power belong
Our faith and sacrifice.”

—Kipling.

The last utterance of an official nature referring to Medical Reserve Corps stated that ten medical officers will be needed for every thousand men. Already nearly a million and a half men are under arms and there are about seventeen thousand medical officers with commissions, including the regular Medical Corps, the Medical Reserve Corps and the National Guard.

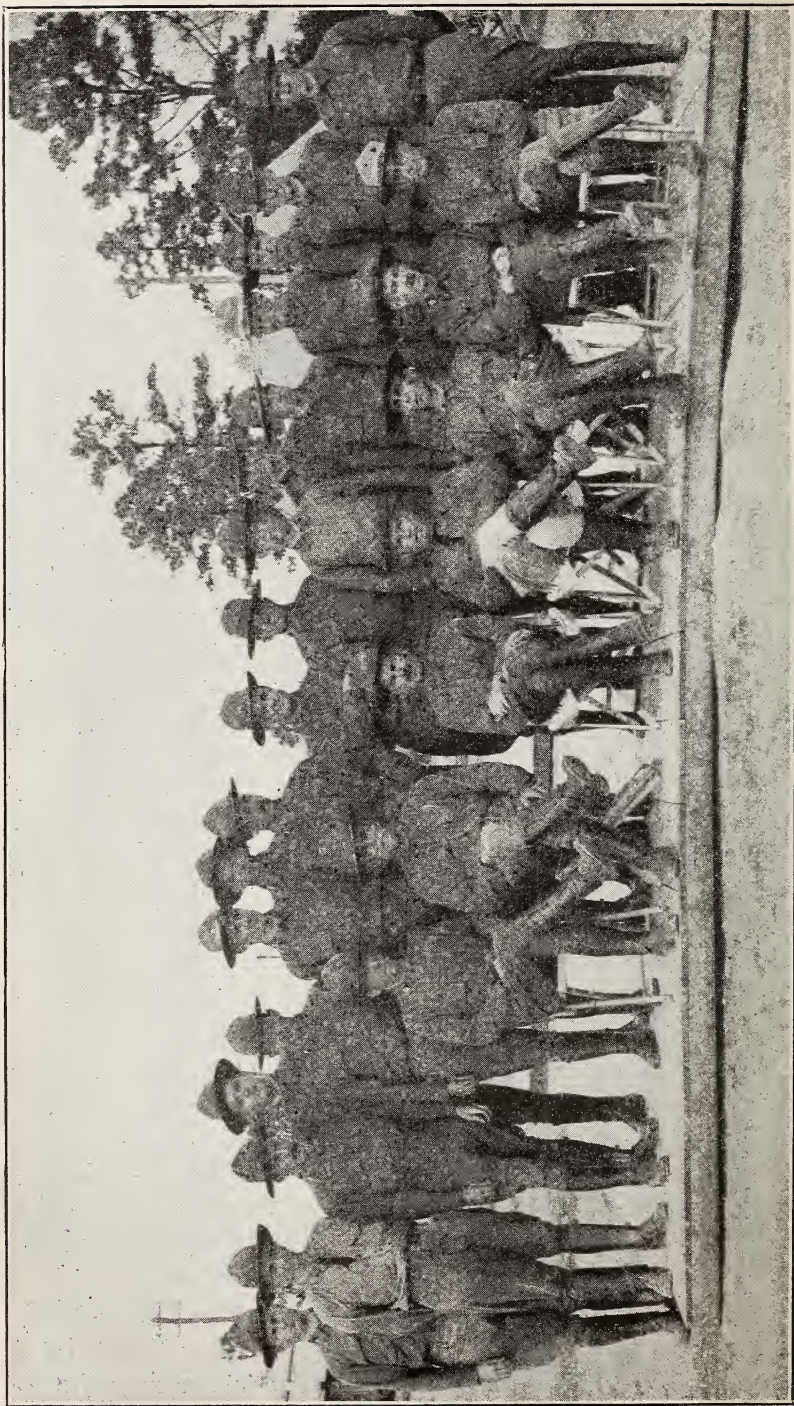
The outlook is clear for many more troops and in another six months there should be another army of a million and a half men under way and for that army fifteen thousand medical officers will be needed. *And after that? WHEN WILL YOU BE READY?*

The time is at hand when the medical profession will be mobilized and every man who is physically able will be detailed for military duty—but *before that time comes every able bodied* man who is *now free, should volunteer* in order that he may help to make that mobilization effective. There are *over 2000* physicians in Louisiana. As yet *less than 12* per cent. have volunteered for military service.

This Committee has been instructed by the Council of National Defense to carefully sift the state for the men who ought to be in the Medical Reserve Corps of their own free will.

Men of *draft age* who are holding back, *unless otherwise exempted*, will be sent to the camps when they are called and ordered and there will be no chance for the Reserve Corps until they have qualified in camp as soldiers.

There should be at least 160 more men of Louisiana in the Medical Reserve Corps and it ought not to be necessary to get out a search for them. While men up to 55 *may join*, men *under 40*



THE TULANE UNIT.
Red Cross Base Hospital No. 24 at Fort Oglethorpe.

are *wanted*; men over 40 will be called upon for other service later on—if they have no call now.

Every man *who can* should join the Medical Reserve Corps now. The time has passed for deliberation. You are *needed*—Now!

It will be necessary to train every man who goes into active service and this takes three months!

Information and all forms may be had by addressing the Medical Reserve Corps Examining Board, 1551 Canal Street, New Orleans, Louisiana.

Medical Personnel of The Louisiana National Guard.

State of Louisiana, Adjutant General's Office,
Baton Rouge, October 27, 1917.

From: The Adjutant General of Louisiana.

To: Chairman, Medical Section, Louisiana Committee of National Defense, New Orleans, Louisiana.

Subject: Medical Officers of the Louisiana National Guard.

Replying to your letter of October 25, 1917, you are advised that the following named medical officers form the personnel of the Medical Department of the National Guard of this State, all of whom are in the Federal service:

Medical Department.

(Medical Corps).

Name.	Rank.	Station.
Devron, John A.,.....	Major,	Camp Beauregard, La.
Pothier, Oliver L.,.....	Major,	Camp Beauregard, La.
Cole, Herbert C.,.....	Major,	Camp Beauregard, La.
Rutledge, William S.,...Major,		Camp Beauregard, La.
Sentell, Newton W.,....	1st Lieutenant,	Camp Beauregard, La.
Nicolle, Henry T.,.....	1st Lieutenant,	Camp Beauregard, La.
Smith, Glenn J.,.....	1st Lieutenant,	Camp Beauregard, La.
McHenry, Armand G.,...1st Lieutenant,		Camp Beauregard, La.
McHugh, Thomas J.,....1st Lieutenant,		Camp Beauregard, La.
Adiger, David,.....	1st Lieutenant,	Camp Beauregard, La.
Bodet, Roy Elmer,.....	1st Lieutenant,	Camp Beauregard, La.

Medical Department.

(Dental Corps).

Hava, Walter C.,.....	1st Lieutenant,	Camp Beauregard, La.
Swords, Collins Ward,...	1st Lieutenant,	Camp Beauregard, La.
House, Charles Gould...	1st Lieutenant,	Camp Beauregard, La.

Medical Department.

(Veterinary Corps).

Robertson, Earl Wilson,.	2nd Lieutenant,	Camp Beauregard, La.
Ratigan, William J.,....	2nd Lieutenant,	Camp Beauregard, La.

(Signed) CECIL C. McCORRY.

1st Lieutenants Ernest E. Allgeyer and Frederick K. Fenno have reported for duty with the Louisiana National Guard in Camp Beauregard.

Major John A. Devron is now the ranking Medical officer of the Louisiana National Guard, and therefore member of the Medical Section. Major Devron's name should appear in place of Major Pothier, as published in Bulletin II.

Chairmen of Parish Auxiliary Medical Defense Committees of Louisiana.
(Revised List.)

- Acadia—Dr. E. M. Ellis, Crowley.
- Allen—Dr. C. Lewis Gaulden, Elizabeth.
- Ascension—Dr. T. H. Hanson, Donaldsonville.
- Assumption—Dr. W. E. Kittredge, Napoleonville.
- Avoyelles—Dr. T. A. Roy, Mansura.
- Beauregard—Dr. J. C. Miller, Bon Ami.
- Bienville—Dr. J. M. Moseley, Arcadia.
- Bossier—Dr. D. J. McAnn, Atkins.
- Caddo—Dr. J. C. Willis, Shreveport.
- Caldwell—Dr. I. B. May, Columbia.
- Catahoula—Dr. E. R. Yancey, Jonesville.
- Claiborne—Dr. C. C. Craighead, Athens.
- De Soto—Dr. S. D. Kearney, Pelican.
- East Baton Rouge—Dr. Chas. McVea, Baton Rouge.
- East Carroll, Dr. W. H. Hamley, Lake Providence.
- East Feliciana—Dr. E. M. Toler, Clinton.
- Franklin—Dr. A. J. Reynolds, Ft. Necessity.
- Grant—Dr. E. B. Gray, Colfax.
- Iberia—Dr. G. J. Sabatier, New Iberia.
- Iberville—Dr. G. A. Darcantel, White Castle.
- Jackson—Dr. A. E. Simonton, Jonesboro.
- Jefferson—Dr. G. F. Gelbke, Gretna.
- Jefferson Davis—Dr. N. S. Craig, Jennings.
- Lafourche—Dr. Chas. J. Barker, Thibodaux.
- Livingston—Dr. J. M. Ehlert, Springfield.
- Lincoln—Dr. A. E. Fisher, Choudrant.
- Morehouse—Dr. O. M. Patterson, Bastrop.
- Natchitoches—Dr. Jos. Bath, Natchitoches.
- Orleans—Dr. George F. Cocker, New Orleans.
- Ouachita—Dr. O. W. Cosby, Monroe.
- Plaquemines—Dr. H. L. Ballowe, Buras.
- Pointe Coupe—Dr. R. M. G. Carruth, New Roads.
- Rapids—Dr. R. O. Simmons, Alexandria.
- Red River—Dr. C. E. Edgerton, Coushatta.
- Richland—Dr. H. C. Chambers, Girard.
- Sabine—Dr. J. M. Middleton, Many.
- St. Charles—Dr. R. H. Johnson, Moberly.
- St. John—Dr. S. Montegut, Laplace.

St. Helena—Dr. A. J. Newman, Montpelier.
St. Landry—Dr. Joe Saizan, Opelousas.
St. Martin—Dr. P. H. Fleming, St. Martinville.
St. Mary—Dr. L. B. Crawford, Patterson.
St. Tammany—Dr. W. E. Van Zant, Mandeville.
Tangipahoa—Dr. E. L. McGehee, Hammond.
Tensas—Dr. J. Whitaker, St. Joseph.
Terrebonne—Dr. L. J. Menville, Houma.
Union—Dr. R. L. Love, Farmerville.
Vermilion—Dr. C. J. Edwards, Abbeville.
Washington—Dr. E. E. Lafferty, Bogalusa.
Webster—Dr. R. C. Tompkins, Minden.
West Baton Rouge—Dr. F. H. Carruth, Lobdell.
West Carroll—Dr. C. W. Smith, Oak Grove.

PLEASE SEND YOUR DOLLAR.

Intensive Instruction in the Treatment of Fractures, for Officers of the Medical Reserve Corps of the Army.

Because of the large number of serious complicated fractures—fractures comprise more than 25 per cent of all casualties occurring in the war, which will require special methods of treatment in order to obtain ideal results, the Surgeon General approved the plan of a special fracture hospital located as far forward on the line of communication as possible, the unit to obtain 1000 beds. Captain J. B. Walker, the distinguished New York surgeon, has been assigned as surgeon in chief of the special fracture hospital.

In this special center, the most serious cases will be treated as well as possible by especially skilled surgeons, and they will be utilized as presenting an ideal towards which all should work.

The formation of this unit, devoted to the special surgery and treatment of fractures, has been justified by the notable advances achieved in the treatment of fractures in similar special units organized and conducted during the past two years with the armies of France. For several years this type of specialized and expert work has been at the disposal of the surgery in civil life. For the first time in history, it has become an integral part of the practice of military surgery.

It is conceded by all cognizant of the situation, that there are comparatively few men, working in general surgery, who are familiar with the various mechanical means which have been developed during the war, and which have produced such excellent results with serious fractures.

For those members of the Medical Reserve Corps who have had only a general surgical training, and who may be assigned to the fracture service of the army, courses of intensive instruction in the treatment of fractures have been approved; are of four weeks duration and have been inaugurated in various cities where there are satisfactory clinical facilities. It is desired to standardize the treatment of complicated gunshot fractures by instructing medical officers in the use of typical forms of stock splints for various fractures, so that when these officers return to their various cantonments, they can, in time, instruct those who have not had the opportunity of receiving this special course of instruction.

By order of the Surgeon General, and through the courtesy of the administrators of the Charity Hospital, Touro Infirmary, and the School of Medicine of Tulane University, such a course was inaugurated at the Charity Hospital on Monday, November 5, under the direction of Dr. Rudolph Matas, Major, M. R. C., who, assisted by an able staff of instructors, is utilizing the large clinical and laboratory opportunities offered by these institutions, in carrying out the Surgeon General's program in all its details.

The course was opened by preliminary exercises and clinics at the Miles Amphitheatre, with the following officers in attendance.

Major James G. Goodwin, M. R. C., Camp Gordon, Ga.; Captain Daniel B. Cliffe, M. R. C., Camp Greenleaf, Fort Oglethorpe, Ga.; Captain Stillwell C. Burns, M. R. C., Fort Wordsworth, N. C.; Captain H. B. Kuhn, M. R. C.; Base Hospital No. 2, Fort Bliss, Tex.; Lieutenant L. J. Arnold, M. R. C., Camp Greenleaf, Fort Oglethorpe, Ga.; Lieutenant W. R. Barton, M. R. C., Camp Logan, Houston, Tex.; Lieutenant J. C. Cook, M. R. C., Camp Wheeler, Ga.; Lieutenant James G. Murfin, M. R. C., Camp Greenleaf, Fort Oglethorpe, Ga.

PLEASE SEND YOUR DOLLAR.

Commissions Declined.

Drs. Edmond Souchon, Marion Souchon, H. B. Gessner, E. L. King, R. M. Blakely, of New Orleans, have notified the Medical Section that they have not accepted commissions in the Medical Reserve Corps. Their names, therefore, should be removed from the list published in the last Bulletin.

A like notice should be sent by all who have declined commissions.

A list of all Louisiana men recommended for commissions is being revised for publication in the next bulletin. The names of all those who are *holding commissions without action* will be printed so that they may be influenced to act one way or the other, as it is unfair to those who are enlisted to delay action. Moreover such delay may be misinterpreted as it is known that not a few men are advertising the fact that they have commissions, when the truth is they have never taken oath of office.

Shreveport Acts.

By a resolution passed by the Shreveport Medical Society, the practice of doctors who are called to war is being done by members of the Society who remain at home. One-third of all medical and one-half of all surgical fees collected is to be turned over to the Secretary of the Society for transmission to the family of the doctor for whom the practice is done.

Causes for Rejection.

The loss of vision in one eye is disqualifying under existing regulations in all candidates for commission or enlistment in any branch of the service.

A simple congenital hydrocele which in no way impairs the applicant's marching ability is not considered a cause of rejection for appointment in the Medical Reserve Corps. A large hydrocele is a cause of rejection.

The department is following the general rule of rejecting applicants below 45 years of age who are dependent upon dental plates. For applicants over 45 years of age, this is not a cause of rejection if the applicant is otherwise in first-class physical condition. The reason for making the difference according to age is that officers under 45 years of age may be on duty under such conditions that they will have to subsist on field rations, and an accident to their dental plates might result in their inability to continue on active duty with troops.

PLEASE SEND YOUR DOLLAR.

Over 69,000 Men Enlisted in Army Medical Service.

The Medical Department of the Army now has an enlisted personnel of over 69,000 men, compared with 6,600 just before the outbreak of the war. Nearly 13,000 officers had accepted commissions in the Medical Reserve Corps up to October 1; the Dental Reserve Corps now has over 2,600 commissioned officers and the Sanitary Corps about 240.

In organizing for war work the Surgeon General's office has added sections on internal medicine; medical officers' training camps; medical military instruction; psychology; neurology and psychiatry; surgery; infectious diseases and laboratories; head, eye, ear, mouth and brain; military orthopedics; special hospitals and physical reconstruction; gas defense; food; office development and filing system.

The Surgeon General's office now has over 500 clerks and messengers and more than 100 officers, compared with 140 clerks and messengers and 10 officers which made up its personnel in March, 1917. On October 1 the Regular Nurse Corps numbered over 300 members, with about 1,600 members in the Reserve Nurse Corps, as compared with 230 in the regular corps and 227 in the reserve corps in March, 1917.—*Official Bulletin.*

On Duty at Camp Beauregard.

During October and a part of November, a Board of Examiners for Tuberculosis was on duty at Camp Beauregard. Major Whyte Glendower Owen, M. R. C. was president of the Board, with Drs. L. O. Clark, of Lake Charles, Leon J. Menville, of Houma, Thos. E. Wright and R. W. O'Donnell, of Monroe, Wallace J. Durel, P. L. Querens, E. L. Levin, A. E. Fossier, of New Orleans, as the other members.

Aviation Corps Examiners.

Drs. R. C. Lynch and Edmond Moss, of New Orleans have been appointed the medical members of the Examining Board at New Orleans for the Aviation Corps.

PLEASE SEND YOUR DOLLAR! WE NEED IT.

Previously acknowledged. \$ 16.00
 Received since. 28.00
 From Drs.

C. M. Horton, Franklin.	M. C. Brown, Alexandria.
R. M. Van Wart, New Orleans.	H. C. Milburn, Ville Platte.
Oscar Dowling, Shreveport.	J. T. Bringier, Burnside.
J. L. Scales, Shreveport.	C. J. Barker, Thibodaux.
F. J. Kearney, Plaquemine.	U. J. Arreteig, Duson.
F. H. Carruth, Lobdell.	E. A. Hogan, New Orleans.
H. S. Joseph, Melville.	E. Lafleur, Opelousas.
W. F. Carstens, New Iberia.	E. L. King, New Orleans.
E. Dreifus, New Orleans.	T. H. Hanson, Donaldsonville.
H. B. Gessner, New Orleans.	C. W. Kibbe, Abbeville.
W. P. Yerger, Mound.	T. J. Harrison, Montgomery.
A. E. Fisher, Choudrant.	H. J. Otto, New Orleans.
B. A. Littell, Opelousas.	F. A. Larue, New Orleans.
S. D. Kearney, Pelican.	J. E. Brierre, New Orleans.

Total received to date. \$ 44.00

All funds to *Medical Section, Louisiana State Committee of National Defense.* P. O. Box 778. New Orleans.

Acting under instruction of the Council of National Defense at Washington, a ballot for a *vice* Chairman and for an *Assistant* Secretary of the Medical Section was mailed to all members of the Section, resulting in the unanimous election of

Dr. Oscar Dowling, vice-Chairman.

Dr. E. L. Leckert, assistant-Secretary.

Medical Section Louisiana State Committee of National Defense.

Executive Committee:

Dr. Isadore Dyer, Chairman.

Dr. Oscar Dowling, vice-Chairman.

Dr. L. R. DeBuys, Secretary.

Dr. E. L. Leckert, Assistant-Secretary.

Dr. C. J. Miller, Dr. S. W. Stafford, Dr. Chas McVea.

The full membership of the Medical Section will be published in a later Bulletin and as soon as the personnel can be completed.

Please address all official communications to the Chairman, Medical Section, P. O. 778, New Orleans, La.

WHEN THE FLEET GOES OUT TO SEA.

The laughter of golden morning is stilled by a summer haze.
The tide's asleep at the flood-mark, a-hush are the harbor ways,
A-hush with the expectation that the waiting thousands feel
For sight of the mighty pageant of a people's prayer in steel.
There's smoke at the mouthing funnels where a moment since was none,
And mounting high to the veiled sky the brilliant signals run.
Far over the glassy river the bugle-notes ring free,
And the black mud stains round the anchor chains, for the fleet goes
out to sea.

A prayer, and for Peace? Aye truly, an orison winged with fire,
To break with the voice of thunder on the music of Heaven's choir.
Though Peace be the prayer of mothers since the sword-scarred world
began

The word that's blown to the Mercy-Throne is the prayer of a fighting
man.

They've swung the bells to the fore-tops, they're dressing the ships below,
A-peak is the lordly ensign, they're slipping the leash to go,
And the smoke is a cloud of wonder and battailous majesty
For the wreathing vast of each fighting-mast as the fleet goes out to sea.

"Have Faith," it is writ, "but labor that the Works of your Faith be
done."

For Peace is a swift-winged swallow that nests in a shotted gun,
And when from the war-wild Winter she flies to a warmer wold
She bideth but where men labor to fend for the Winter's cold.
At last, now at last they're moving so slow that we hardly knew,
And the waters curl and tremble to the first throbs of the screw,
And the bands crash out with a war-song of your fathers strong and free
And a flag they bore in the hot heart's core, when their fleet went out
to sea.

See how on the flanks extended, as swift as the ripples burn,
Go snaking the lean destroyers with never a trail astern,
And out from the piers come swimming to join in the seaward race
The turtles—the strange sea-divers—a head and a carapace.
Now the flags and the pennants blossom from the league-long crowds
ashore,

And the roar of the cheering faintly comes back in a distant roar,
For the stars of the dark-blue banner have girded them mightily
To tear the rack in a comet-track, as the fleet goes out to sea.

Now faster they speed and faster, the foam from the forefoot flies,
A line like the wild geese driving through dusk of December skies.
Each one with her cloud outvying the belch of the cloudy van,
And spaced to a measured fathom—God—look at it while ye can
Each towered sea-fortress sweeping as light as a shallop runs,
And spiked out of flank and turret guns—over all the guns
Oh, where is the man so prostrate—if e'er such a thing could be—
But the sight would tole at his inmost soul when the fleet goes out to sea?

They're past—like a floating city they show to the misty sun,
The towers and the glancing ancients in a smoke of gold and dun.
They're gone—and the rolling river is empty and void and vain.
O, ye that bear sword in Heaven, whose foreheads are pure from stain.
And ye that were crowned for valor below in the earthly dark,
Saints Uriel, George and Michael, and the mail-clad Joan of Arc,
Draw near in the looming storm-cloud, when the war-winds burst and
flee,
And guard them all from the bolts that fall, for the fleet's gone out
to sea!

—E. SUTTON.—*Army and Navy Register*, Sept. 4, 1917.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

Edited by DR. L. R. DE BUYS, Secretary-Treasurer.

ONE THOUSAND MEMBERSHIP.

Hurrah! The goal to which the Society has been striving for the past three years has been reached! It is with profound pleasure that the announcement can be made that our membership is now *One Thousand* which is the greatest in the history of the Louisiana State Medical Society, and an increase of more than thirty-three and one third (33 1/3%) per cent. over the membership of three years ago. When last computed by this office 54% was the maximum membership of any of the societies in the United States. At present our Society has a membership of 66 2/3% of the eligible physicians in the State.

MEN IN SERVICE APPRECIATE MEMBERSHIP.

It is indeed gratifying to know that our members in service do not want to sever their ties with their State Society and organized medicine. A short time ago a circular letter was sent from this office to each member of the Louisiana State Medical Society in service with the request that he specify whether he did or did not wish to continue his membership during his period of service. It was with quite a little difficulty that these letters reached their destination. They were sent care of the Surgeon General's office at Washington, but were returned as that office could not forward them. The letters were then sent to the old addresses with the "Please forward" mark on them. Only a few of these letters have miscarried as indicated by being returned to this office. In all

the replies our members with only one exception have signified their desire to continue membership during their period of service and one has stated that he wishes his journal to be forwarded to him regularly assuring this office that he will furnish his changes in address.

This appreciation on the part of our members is indeed a stimulus to our energies to continue the policy inaugurated of offering as much as is possible to our members.

ADVICE TO MEMBERS.

You know you are going to continue your membership in the State Society during 1918.

You know that the Society is offering with its membership, besides many other advantageous, Medical Defense and subscription to the Journal.

You know your protection by Medical Defense begins on the date your dues are received at the office of the State Society and during the period from the first of the year to the date your dues are received you are unprotected.

You know that if your dues are received after the first of the year the Journal for 1918 will be sent you beginning with the issue of the first following month.

Why not then submit your dues for 1918 at once before you forget or at least in time for them to be received at the office of the State Society on or before January 1st, 1918, so that there will be no lapse in your benefits and the files of your Journal will not be broken but will be complete for future reference. Do it now!

ADVICE TO COMPONENT SOCIETIES.

You know that in organized parishes the dues from members to the State Society must be sent through the parish society.

You know the responsibility of selecting active officers for the success of your Society.

You know the advantages of having all eligible physicians in your parish as members.

You know that the larger your membership the greater representation you have in the voice of organized medicine in the State.

You know that your meeting for the election of officers and delegates should be held sometime before the end of the year to serve during the ensuing year.

You know that a member in a parish which has been organized may protect his interests should his parish become delinquent by submitting his dues direct to the State Society.

Why not then meet, elect officers, and delegates at once, submit your report along with the dues of your members to the office of the State Society so that your duty toward your members will be performed and their interest conserved. *Do it now.*

NEWS AND COMMENT

TO OFFICERS OF THE MEDICAL RESERVE CORPS, U. S. ARMY INACTIVE LIST.—Information has been received from the Surgeon-General of the U. S. Army that assignment to active duty may be delayed. These officers are advised to continue their civilian activities pending receipt of orders, and they will be given 15 days' notice when services are required.

JOURNALS MERGE.—THE MEDICAL REVIEW OF REVIEWS has purchased *Pediatrics* a monthly journal devoted to diseases of children, and will open a department of pediatrics in its journal. *Pediatrics* will no longer appear as a separate publication.

UNIT OF WOMEN DOCTORS FOR FRANCE.—The Woman's Hospital of New York has organized and equipped a unit of ten women doctors for service in a base hospital in France. The unit will leave for France in the near future.

CLINICAL CONGRESS DEVOTED TO WAR SESSIONS.—The eighth annual convention of the Clinical Congress of Surgeons of North America, held in Chicago the latter part of October, was a war session. The clinics were largely devoted to demonstrations of war methods, of the new antiseptics, of the new treatment for war burns and of the handling of cases of shock. There was great applause when it was announced during one of the sessions that 18,000 physicians had offered their services, without conscription, to the government, and that special conscription of the medical profession would not be needed.

NATIONAL BOARD EXAMINATION.—The third examination of the National Board of Medical Examiners was held in Chicago, October 10-18. Of the twenty-eight candidates examined, twenty-

two passed. The next examination will take place at Bellevue Hospital, New York City, January 9-17, 1918.

AMERICAN PUBLIC HEALTH ASSOCIATION ELECTED OFFICERS at its forty-fifth annual meeting held in Washington, D. C., October 17-20, under the presidency of Dr. William A. Evans, as follows: president, Dr. C. O. Hastings, Toronto; vice-presidents, Drs. Geo. M. Kober, Washington, D. C., Emanuel S. Iglesias, Vera Cruz, Mexico, and Guilford H. Summer, Des Moines, Iowa; secretary, A. W. Hedrich, Boston; treasurer, Lee K. Frankel, New York. A resolution was adopted by the association favoring the bestowal of the Nobel Prize on Major-General Wm. C. Gorgas, Surgeon-General, U. S. Army, for placing yellow fever in the list of preventable diseases.

NEW YORK HOSPITALS SHOW BIG DEFICIT.—Among the hospitals of New York reporting deficits for the year ending September 30 are the New York Hospital, German Hospital, Volunteer Hospital, the Nursery and Child's Polyclinic and the Lying-In Hospital. These deficits are due largely to war conditions, the increased cost of living cutting down sums usually contributed to hospitals, and there has been a material increase in the number of patients the various hospitals have had to care for. The deficit is estimated at \$1,000,000.

RED CROSS XMAS SALE FOR TUBERCULAR SOLDIERS.—Virginia has planned to use some of the proceeds from the Red Cross Seal Sale for establishing a War Tuberculosis Campaign Fund for the maintenance of rejected men, tubercular soldiers and their families.

HIGH COST OF LIQUOR EMPTIES HOSPITALS.—The City Hospital of St. Louis is said to have been without a patient in the alcoholic ward, and during a period over forty-eight hours no patient was sent in for treatment. The daily average number of patients during the last year was about fifteen, with a high record of 45. This shortage of patients is attributed to the high cost of liquor.

SOUTHERN MEDICAL ASSOCIATION MEETING.—The annual convention of this association was held in Memphis, November 12-15. Among the principal subjects discussed at the meeting were tuberculosis, the eradication of malaria, the condemnation of patent medical preparations carrying on their labels fraudulent or deceptive statements as to curative or remedial properties. In the annual address of the president, Dr. Duncan Eve, an appeal was made to

the young physicians and surgeons of the South to enlist for military service and scored "pitiful pacifists and malicious Teutonic propagandists." Medical and Surgical clinics were held and sectional meetings dealing with public health and medicine.

The officers elected for the ensuing year are: president, Dr. Lewellyn F. Barker, Baltimore; Dr. Wm. H. Deaderick, Hot Springs, first vice-president; Dr. T. C. Halloway, Hazard, Ky., second vice-president; Dr. Seale Harris, Birmingham, Ala., secretary.

Dr. Maud Loeber, of New Orleans, was elected chairman of the membership committee of the women's section of the Southern Medical Association. Asheville was chosen for the 1918 meeting place.

GUIDE FOR FORMULATING A MILK ORDINANCE.—The United States Department of Agriculture has issued a "Guide for Formulating a Milk Ordinance," which is designed to protect the community against fraud and disease and to insure cleanliness in the production and handling of milk. Health officers and physicians interested in improving milk may obtain it free on application to the department.

REMOVALS.—Dr. J. H. Petty, from Fredericksburg, Texas, to Endee, New Mexico.

Dr. M. L. Flynt, from Mart, Texas, to D'Lo, Miss.

Dr. W. A. Love, from 1211 Maison Blanche Bldg., to 2nd Floor Cusachs Building.

Drs. T. B. Sellers and Roy Harrison, from 4th to 2nd Floor, Cusachs Building.

Dr. E. A. Bertucci, from 1226 to 1115 Maison Blanche Bldg.

Dr. F. A. Lamothe, from 103 Chartres St., to 1226 Maison Blanche Bldg.

Dr. P. A. Moore, from 103 Chartres St., to 802 Audubon Bldg.

Drs. G. King Logan and C. L. Eshleman, from 1232 to 1206 Maison Blanche Bldg.

Dr. Geo. Tusson, from 1031 to 1108 Maison Blanche Bldg.

Dr. E. F. Salerno, from 1121 to 1130 Maison Blanche Bldg.

Drs. E. S. Keitz, J. O. Weilbacher and A. D. Mouledous, from 623 Macheca Bldg. to 1108 Maison Blanche Bldg.

Dr. Gayle Aiken, to suite 411-12 Macheca Bldg.

Dr. V. L. Sandifer, from Pleasant Hill, to Natchitoches, La.

Dr. L. V. J. Lopez, First Lieut., from Fort Riley, Kansas, to Camp Gordon, Atlanta Ga.

Dr. W. M. Johnson from Eye, Ear, Nose and Throat Hospital, to 1121 Maison Blanche Bldg.

THE CLINICAL LABORATORY, from 1206 Maison Blanche Bldg., to 303 Medical Bldg.

PERSONALS.—Among the doctors from New Orleans who attended the meeting of the Southern Medical Association in Memphis were Drs. S. K. Simon, Randolph Lyons, Marcus Feingold, Elizabeth Bass, Allan Eustis, C. C. Bass, W. J. Durel, H. Dupuy, J. T. Crebbin, L. H. Landry, E. S. Hatch, Maud Loeber and Isadore Dyer. Dr. Randolph Lyons was elected Chairman of the Section of Medicine for the 1918 meeting.

Dr. C. Jeff. Miller was called to Washington during the month in the interest of the District Exemption Board, of which he is chairman.

Dr. H. R. Carter, of the U. S. P. H. Service, Ancon, C. Z., was a visitor in New Orleans during the past month.

ORLEANS PARISH MEDICAL SOCIETY NEWS.

AT THE REQUEST of the Orleans Parish Medical Society we publish the following:

War Department, Office of the Surgeon General,

Washington, October 25, 1917.

Dear Doctor:

In a letter of September 21, 1917, the Surgeon General directed your attention to the following:

He is arranging for special treatment for wounded, including special efforts for functional restoration of damaged parts and vocational re-education for those who, from the nature of their illness or injury, are unable to follow their previous occupation.

A number of the Secretaries of County Medical Societies responded to that letter. In order to make our work as comprehensive and as successful as possible, we are anxious to learn every type of occupation which our crippled and diseased handicaps are doing. Won't you assist in this work by having every physician in your county society compile a list of every cripple he knows and the type of work he is doing, and return the same to the undersigned as soon as possible? For your guidance, we are enclosing a questionnaire in the form of a chart which gives you the information we are desirous of obtaining.

Some of the doctors have already returned interesting autobiographies from successful cripples, even sending photographs showing them at almost unbelievable occupations in spite of their handicaps. Would you ask your members to secure as many of these histories, and when possible photos, and send in at once? These are to be compiled in a booklet and sent to our war cripples in order to cheer them up and show them that there is still a further work to do notwithstanding their handicapped condition.

HARRY E. MOCK,

Lieutenant, M. O. R. C.

PUBLICATIONS RECEIVED

WM. WOOD & COMPANY, New York, 1917.

A Reference Handbook of the Medical Sciences, by Various Writers. First and second edition edited by Albert H. Buck, M. D. Third edition, completely revised and enlarged, edited by Thomas Lathrop Stedman. Complete in eight volumes. Vol. VIII.

Kirk's Handbook of Physiology. Revised and rewritten by Charles Wilson Greene, A. M., Ph. D. North American edition.

J. B. LIPPINCOTT COMPANY, Philadelphia and London, 1917.

International Clinics. Volume III. Twenty-seventh Series, 1917.

White and Martin's Genito-Urinary Surgery and Venereal Diseases.

By Edward Martin, A. M., M. D., F. A. C. S., Benjamin A. Thomas A. M., M. D., F. A. C. S., and Stirling W. Moorhead, M. D., F. A. C. S. Tenth edition.

W. B. SAUNDERS COMPANY, Philadelphia and London, 1917.

The Medical Clinics of North America. September, 1917.

C. V. MOSBY COMPANY, St. Louis, 1917.

Diseases of Women, by Harry Sturgeon Crossen, M. D., F. A. C. S.

P. BLAKISTON'S SON & COMPANY, Philadelphia, 1917.

Elements of Field Hygiene and Sanitation, by Joseph H. Ford, B. S., A. M., M. D. Approved for publication by the Surgeon-General U. S. Army.

PAUL B. HOEBER, New York, 1917.

Recollections of a New York Surgeon, by Arpad G. Gerster, M. D.

Radium Therapy in Cancer. At the Memorial Hospital, New York. First Report, 1915-1916. By Henery H. Janeway, M. D., Benjamin S. Barringer, M. D., and Gioacchino Failla, E. E., A. M.

THE MACMILLAN COMPANY, New York, 1917.

The Clinical Pathology of the Blood of Domesticated Animals, by Samuel Howard Burnett, A. B., M. S., D. V. M. Second edition, revised and enlarged.

A Handbook on Antiseptics, by Henry Drysdale Dakin, D. Sc., F. I. C., F. R. S., and Edward Kellogg Dunham, M. D.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for October, 1917.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	3	1	4
Intermittent Fever (Malarial Cachexia)	—	1	1
Smallpox	—	—	—
Measles	—	—	—
Scarlet Fever	—	—	—
Whooping Cough	—	—	—
Diphtheria and Croup	3	—	3
Influenza	2	—	2
Cholera Nostras	—	—	—
Pyemia and Septicemia	—	—	—
Tuberculosis	39	38	77
Cancer	21	4	25
Rheumatism and Gout	1	1	2
Diabetes	10	1	11
Alcoholism	1	1	2
Encephalitis and Meningitis	2	—	2
Locomotor Ataxia	1	—	1
Congestion, Hemorrhage and Softening of Brain	10	14	24
Paralysis	8	1	9
Convulsions of Infancy	—	—	—
Other Diseases of Infancy	9	13	22
Tetanus	—	—	—
Other Nervous Diseases	7	1	8
Heart Diseases	70	39	109
Bronchitis	2	—	2
Pneumonia and Broncho-Pneumonia	14	20	34
Other Respiratory Diseases	1	2	3
Ulcer of Stomach	3	2	5
Other Diseases of the Stomach	1	1	2
Diarrhea, Dysentery and Enteritis	12	8	20
Hernia, Intestinal Obstruction	1	2	3
Cirrhosis of Liver	4	9	13
Other Diseases of the Liver	4	3	7
Simple Peritonitis	—	—	—
Appendicitis	5	1	6
Bright's Disease	36	23	59
Other Genito-Urinary Diseases	13	9	22
Puerperal Diseases	4	2	6
Senile Debility	1	—	1
Suicide	4	—	4
Injuries	19	18	37
All Other Causes	10	11	21
TOTAL	321	226	547

Still-born Children—White, 21; colored, 22; total 43.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1000 per annum for Month—White, 13.96; colored, 26.59; total, 17.36; Non-residents excluded, 15.21.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure. 30.07

Mean temperature. 66.

Total precipitation. 0.71 inches

Prevailing direction of wind, northeast.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITORS:

CHARLES CHASSAIGNAC, M. D.

ISADORE DYER, M. D.

COLLABORATORS:

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 JOHN M. SWAN, M. D., Secty. American Soc. of Tropical Medicine..... }
 L. R. DE BUYS, M. D., Secretary Louisiana State Medical Society..... } *Ex-Officio*.
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 R. P. STRONG, M. D., Harvard University.
 ROY M. VAN WART, M. D., Tulane University of Louisiana.

Vol. LXX

JANUARY, 1918

No. 7

EDITORIAL

A HAPPY NEW YEAR.

That we are well advanced in the fourth year of carnage and devastation brought by the world war and that the situation for our allies and selves is not particularly bright at the moment the new year opens, are no good reasons why we should not once again wish our readers and patrons—our friends—a happy new year.

Better can we do so this year than last for in the meantime we have seen our duty as a nation and we are doing it as we understand it. The medical profession, the greatness of whose mission is realized even better in war than in peace, is offering itself to the country and to the cause, is laboring to perform its share of the stupendous task which is before those who believe that right is above might.

What are toil, want, pain when weighed in the balance against

the sense of duty well done, the relief of agony, the righting of wrong?

We *can* be happy doing our bit, each according to his light and his opportunity, though it mean fatigue, privation and suffering, if we feel we are bringing nearer and nearer the time when we may

“Ring out old shapes of foul disease,
Ring out the narrowing lust of gold.
Ring out the thousand wars of old,
Ring in the thousand years of peace!”

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

FRACTURE OF THE INFERIOR MAXILLA.*

By DR. A. G. FRIEDRICHS, New Orleans.

The case which I present carries no special feature, either in the way of novelty or originality. My purpose in presenting it to you is to bring your attention to a splint which allows perfect mobility and use of the masticatory machine, without any interference whatever or even discomfort. It is singular that the medical profession seems to display so much ignorance in regard to this matter, apparently satisfied with any kind of result just so there is a union of the fragments without regard to the future use of the jaws. Some of the results which I have seen are simply appalling. The use of bandages in an attempt at accomplishing immobility of the jaw, results in failure, as in my experience, an apparatus of any kind, whether it be bandage or splint, which has not been especially prepared for the individual case, is a flat failure. In fact, the fixing of the jaw in any position but in normal occlusion, would in my judgment, in the present day of enlightenment, be considered malpractice.

This particular splint is only applicable where you have teeth

*Case presented before the Orleans Parish Medical Society, October 22, 1917. [Received for publication November 15, 1917.—Eps.]

on either side of the fracture. It matters not how many fractures of the jaw you have, whether compound or comminuted.

Where the fracture is beyond the teeth, whether in the body of the jaw or at the angle, a splint of this character would not avail and the case has to be treated by a different plan. In the case of a fracture of the kind above mentioned, if you have teeth in occlusion, by wiring these teeth in their proper relation, you establish the normal occlusion and fix the fracture in a state of immobility. Now in regard to the end of the fracture, if it be at the angle, whether it be in proper approximation or not, its union in that position will not affect the proper use of the masticating machine.

THE MANUFACTURE OF SERUMS.*

By DR. M. F. WILSON, New Orleans.

Time will only permit of a rapid and somewhat superficial survey of the process of manufacturing antitoxins for the cure of certain infectious diseases. We will use Antidiphtheric Serum as a type, as this is the best known and most widely used, and the process of manufacture of other antitoxic serums, which have a place in medicine, differ but very little from it.

While the general plan of the work is practically the same in all laboratories, individual methods may differ somewhat. There are no secret processes; in fact, the necessarily high scientific character of the work itself and those in charge of such laboratories preclude the idea of secrecy.

The Diphtheria bacillus was discovered in 1883 by Klebs, and in 1884 by Loeffler, and is therefore commonly known as the Klebs-Loeffler bacillus. Behring, Kitasato, Roux and others contributed to the method of immunizing against the organism, and Ehrlich designed a method of estimating the power of toxin and the antitoxin.

The first thing necessary for the manufacture of Antidiphtheric Serum is a pure culture of the causative factor, *Bacillus Diphtheriæ*. A "Starter" flask containing the appropriate culture media is inoculated with the pure culture of the diphtheria organism and transferred to the incubator, where after the bouillon be-

* Read by invitation before the Orleans Parish Medical Society, October 22, 1917. [Received for publication November 15, 1917.—*Eds.*]

comes saturated with the germ and its toxic product. This "starter" flask is used to inoculate other flasks, which after being allowed to grow for a number of weeks, or until the liquid is saturated with the organisms and their toxic properties, the flask is taken into the filtering room where the contents are siphoned through a Berkfeld filter, a pressure of compressed air, about 300 pounds to the square inch being used.

The clear filtrate after being submitted to cultural tests to insure its sterility is used for immunizing the horse. It is called, for convenience sake, "toxin."

In order to arrive at the potency of the toxin we make use of Ehrlich's method, which consists of injecting into normal 250 gramme guinea pigs, a mixture of the toxin under test, in decreasing doses, along with one immunity unit standard Government antitoxin. The object is to determine the smallest amount of toxin required to kill a guinea pig in four days. This is called the "lethal plus" dose ($L +$ dose). Having determined the relative strength of the toxin, it is now ready for use.

The horse is injected subcutaneously, with all possible precautions to preclude bacterial infection. The beginning dose of the toxin is 0.1 mil, combined with an appropriate amount of antitoxin. The result of this injection is usually rise in temperature, with symptoms of rigor, depression and rough coat. These symptoms soon pass off and the first dose is followed in 24 hours by a larger one. These doses are continued for 24 to 48 hours, gradually decreasing the antitoxin amount and increasing the toxin, until the horse receives, for the last dose, about 250 millilitres.

During this process there develops in the blood of the horse a substance known as antitoxin. In most cases the horse is immunized in from three to six months, at which time he is bled from the jugular vein, under sterile precautions, and the blood is collected in large sterile tubes or glass cylinders which are placed in cold storage until clotting occurs. The serum is then decanted off and a preservative added. It is then filtered through a porcelain filter to remove the fibrin and any air-borne organisms, after which it is tested for its antitoxic value again making use of Ehrlich's method as follows:

A number of guinea pigs, each of 250 grammes weight, are injected with the $L +$ dose of toxin and decreasing quantities of the antitoxin under test. This test is just the reverse of the

method of determining the L + dose. What we are now trying to determine is the amount of antitoxin which would neutralize the L + dose and save the life of a 250 gramme guinea pig, or the antitoxic unit. The serum is now tested by a number of safety tests, both microscopical and cultural, and by injecting into guinea pigs. Having passed these tests it is placed in packages for market.

Early in the history of Diphtheria Antitoxin it was discovered that the antitoxin element in the serum was either a globulin, or so intimately associated with the globulin content as to precipitate with it. Various attempts have been made to separate this essential element from the non-essential portions of the serum by various methods, all of which are based upon the principles of repeated precipitation, the final precipitate being dialyzed to a fluid consistency.

There are two reasons for the present use of the globulin serum. First: It is believed that the globulin being free from many of the albuminous substances in the native serum, are less liable to produce undesirable after-effects when administered to humans. Second: The very much smaller bulk of a number of given antitoxic units compared with the native serum is a distinct advantage.

THE DISCUSSION OF DR. WILSON'S PAPER.

Dr. C. W. Duval: I have enjoyed the remarks of Dr. Wilson on Biological Products and feel sure that we all have benefitted from his very clear and lucid presentations of the subject. I note that he stresses the globulin preparation of antitoxin for its value over the whole serum product. Years ago it was thought that the separation of the globulin moiety of the serum which contains the antitoxin would prevent many of the bad effects occasioned by the administration of the whole serum. In other words, there would be less chance of anaphylaxis or serum sickness from the injection of the globulin portion. Experience does not show that such is the case, for there are as many skin eruptions resulting from the globulin as from the whole serum. As the method of separating the globulin is tedious and expensive, and as the purified serum has no advantage over the whole product, there is no need of it; as a matter of fact its use should be discontinued because it necessitates charging a higher price for antitoxin.

I further note that Dr. Wilson in describing the production of diphtheria toxin alludes to large volumes of bouillon. I would like to ask the Doctor if they do not obtain a greater strength of toxin by the employment of small quantities of bouillon. In my experience it is essential that shallow layers of broth be used in the production of

toxin because of the aerobic nature of the diphtheria micro-organism.

Dr. Wilson (In closing): I was surprised to hear Dr. Duval make the statement that authorities agreed that there was no special virtue in the globulins over the native serum. Manufacturers certainly would not go to the added expense of preparing globulins unless there was a demand. Moreover, the smaller bulk of the globulin compared with the native serum is an added advantage.

FURTHER NOTES ON ALIMENTARY GLYCOSURIA.*

By DR. ALLAN EUSTIS, New Orleans.

That there still exists considerable confusion as to when a patient is diabetic, and when he is simply a victim of alimentary glycosuria, is evidenced by even a cursory review of the more recent texts upon this obscure condition. Any additional facts, therefore, which may tend to elucidate the question should be sufficient excuse for the following brief report of cases presenting unusual features.

Folin¹ by means of his technic showed that urine normally contains a small amount of sugar and Meyers² has determined this normal amount to vary from 0.08 to 0.2 per cent. Joslin³ in discussing physiological glycosuria states, "It would seem quite impossible to demarcate sharply between normal and pathological urines with reference to the sugar output." He states further in discussing Alimentary Glycosuria, "If the carbohydrates (ingested) are in the form of starch (alimentary glycosuria e amylo) it would signify diabetes mellitus, but if the carbohydrates (ingested) are in the form of sugar (alimentary glycosuria e saccharo) it might or might not signify diabetes." Naunyn⁴ earlier in attempting to clear up this point had suggested the administration of 100 gms. of dextrose two hours after a breakfast of a large cup of coffee and milk, and 80 to 100 grams of bread. He considered that diabetes mellitus existed if dextrose could be demonstrated in the urine under such conditions, in quantitative amounts. Von Noorden⁵ has always maintained that any one showing sugar in the urine is a potential diabetic and should be treated as such. However, he has admitted to me that many of these cases may live a lifetime and never present a single cardinal symptom of diabetes mellitus, and may never again have a glycosuria after the initial instance.

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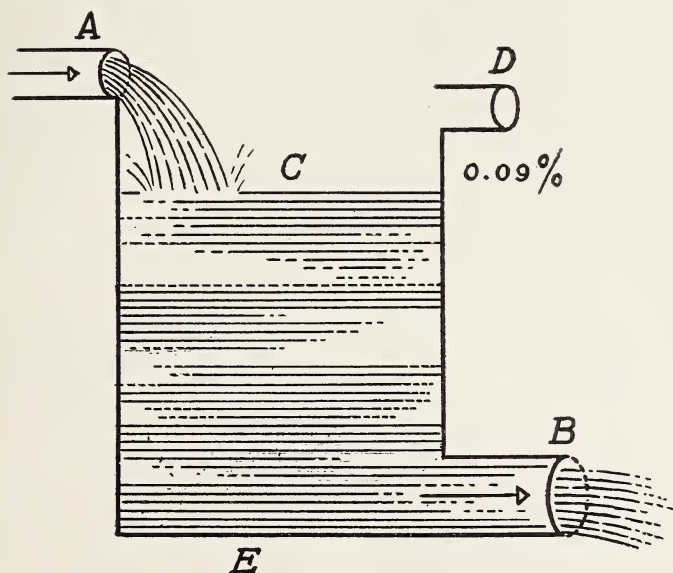
Allen⁶ who has probably contributed more to our knowledge of diabetes than any other single observer of recent years proposes a differentiation between alimentary glycosuria and diabetes based upon experimental data which suggested that the dextrose tolerance of a normal individual is practically unlimited, while in the diabetic the tolerance to dextrose is limited and if administered beyond this tolerance, a greater amount of dextrose is excreted even than is injected. He considers that in the normal individual the dextrose is circulated in the form of a colloid and held by means of an amboceptor which he speaks of as a "pancreatic amboceptor," but that in diabetes due to disease of the pancreas and lack of "pancreatic amboceptor" (internal secretion of other writers) the dextrose circulates as a crystalloid passing through the kidneys readily and producing diuresis. However, later experiments by Woodyatt, Sansum and Wilder⁷ tend to demonstrate that as much depends upon the rate of injection or absorption of the dextrose as upon any condition of colloid or crystalloid. All recent writers have centered their attention upon the carbohydrate factor and have overlooked those cases, by no means rare, whose urines reduce alkaline copper solutions to the extent often of 5 to 7 per cent. of calculated dextrose, but with no action on polarized light and which do not ferment. These cases have no polyuria, polydipsia, or other cardinal symptoms of diabetes mellitus and always present evidences of diseased liver or a passively congested pancreas and a severe intestinal toxemia. In a former paper⁸ before this Society, I called attention to such cases and since then I have observed many more. The fact that only recently having such a case come under my care which had been formerly treated by one of my colleagues as a case of diabetes according to the method of Allen, has led me to again bring the matter to your attention. Such cases are harmed, rather than improved, by the Allen treatment as successful management will depend upon careful attention to the influence of intestinal toxemia rather than to the carbohydrate intake. Crofton⁹ has since called attention to the influence of intestinal toxemia in diabetics and mentions that the aromatic poisons from the intestinal canal are normally detoxicated by the liver by combining them with sulphuric acid or acetic acid, but that when excessive amounts are absorbed they may be combined with glycuronic acid, and excreted as combined glycuronates by the kidneys. These glycuronates will reduce Fehling's or Benedict's

Solutions, and upon this fact, a wrong diagnosis of diabetes may be made. Another factor in incorrect diagnosis of diabetes is to be found in dextrose radicle obtainable from all protein absorbed, 50 per cent., approximately, of the protein molecule forming dextrose which must be burned, stored up as fat or glycogen, or excreted by the kidneys. The accompanying table illustrates the fate in the body of the several food-stuffs, and will bear repetition from a former paper.

Food Substance.	In alimentary canal split up into:	Absorbed by portal system and transformed by liver into:	Stored up in muscles as:	Burned up by tissues into:	REMARKS.
$C_{12}H_{22}O_{11}$ Saccharose,	Dextrose, $C_6H_{12}O_6$, and Levulose $C_6H_{12}O_6$	Glycogen, $C_6H_{10}O_5$ Glycogen.	Glycogen. Glycogen.	CO_2 and H_2O glycuronic acid. CO_2 and H_2O glycuronic acid.	Dextrose and levulose are excreted by the kidneys if not utilized by the tissues.
Starch, $C_6H_{10}O_5$	Dextrose.	Glycogen.	Glycogen.	CO_2 and H_2O glycuronic acid.	
Maltose, $C_{12}H_{22}O_{11}$	Dextrose, $C_6H_{12}O_6$	Glycogen.	Glycogen.	CO_2 and H_2O glycuronic acid.	Excess maltose excreted by kidneys.
Lactose, $C_{12}H_{22}O_{11}$	Dextrose and galactose	Glycogen.	Glycogen.	CO_2 and H_2O	When liver is deranged, galactose appears in urine.
Cellulose, $C_6H_{10}O_5$	Very little if any effect in human.				
Proteids,	Peptones, amino-acids, xanthine bases.	Serum, albumin and globulin	Syntonin, creatin, etc.	Urea, uric acid, glyccocol, and dextrose.	If liver function is deranged, have lowered alkalinity of blood.
	Ammonia. Toxic amines from intestinal putrefaction.	Urea. Non-toxic compounds.	Creatin. Creatin.		
Fats.	Absorbed through lacteals and into general circulation through the liver. Do not pass through the liver. Incomplete combustion results in diacetic liver.				

As is well known the blood content of sugar is kept within normal limits, from 0.09 to 0.15 per cent. Any condition which raises this content, even momentarily, will cause a hyperglycemia, which will be manifested in a glycosuria. I am well aware of those few cases in which the renal threshold is high and in which a hyperglycemia may exist without a glycosuria, but for all practical purposes it can be accepted that a glycosuria represents a con-

dition of hyperglycemia either temporary or permanent. That a transient hyperglycemia may be dependent entirely upon faulty liver function, can be better understood after studying the accompanying illustration taken from von Noorden¹⁰.



The tank E represents the blood stream in which the sugar level is kept constantly at 0.09%, C, by the fact that the tissues utilize the sugar through the outlet, B, as fast as it flows in from the liver through the inlet, A. Any condition which will cause the inflow from the liver to run faster than the tissues can utilize the sugar, will cause a rise in the level of blood sugar; until there is a hyperglycemia or overcharge of sugar which flows through the kidneys represented by the overflow, D. Such a condition exists in alimentary glycosuria, the glucose, levulose or galactose, passing rapidly through the liver on account of passive congestion of this organ.

In diabetes the liver has lost its power to fix dextrose in the form of glycogen due to the absence of the pancreatic hormone, but in addition, the tissues have also lost their power to utilize dextrose. In other words the tank overflows rapidly and continues to overflow not only on account of increased inflow, but also on account of stoppage of its lower outlet. That even transient disease of the liver is capable of producing a glycosuria has led to

the administration of 100 gms. of levulose by Strauss¹¹ and of 50 gms. of lactose by Bauer¹² as tests for hepatic function, the urine being examined for reducing sugars in each instance. I have seen many cases, two of which are reported in detail below, showing as high as 7.0% of calculated dextrose due entirely to congestion of the liver from irritating effects of intestinal poisons, which cleared up in twenty four hours from a brisk purgative and a low proteid diet. It has been interesting to note that after being sugar free and giving a negative test with Ehrlich's Aldehyde reagent and being free from indican, on returning with a strong indican reaction, they again void a urine which will reduce Fehling's Solution.

Cast I. Mr. P. R., a wholesale grocer, 39 years old, was reported in my former paper, having been first seen by me in 1912 with 7.0 per cent. of calculated dextrose, a positive test with Ehrlich's aldehyde reagent and a very strong indican test. At the first examination his liver was enlarged, dulness 14 cm. in mammary line, but with no subjective symptoms of diabetes, except, languor and loss of weight. After free purgation, a two week's vacation at a resort whose waters are laxative, and living on a low proteid diet, but with an abundance of carbohydrates, his liver dulness decreased to 8 cm. and his urine failed to reduce Fehling's Solution after administering 100 gms. of lactose on an empty stomach. He was cautioned to lead a less sedentary life, to eat sparingly of animal protein and to avoid constipation. I have seen him since at intervals of one to three months up to the present time, and he has never again shown any sugar, while he has since been granted a ten thousand dollar policy in one of our most conservative life insurance companies.

Case II. Dr. W. T. J., 49 years of age, consulted me for languor, inability to properly attend to his professional duties, and on account of the fact that he had repeatedly found sugar in his urine and had lost weight. His bowels were constipated but there was no polydipsia or polyuria. In February, 1916, while weighing 211 pounds, but with a constant feeling of languor, he had found sugar in his urine. He ceased eating sweets and starches and in four months had lost 57 pounds. During this time he had occasional putty stools and while sugar was not a constant constituent of his urine, it was frequently found. A quantitative estimation of sugar in his urine was never made, but he stated that when present it gave a heavy reduction with Fehling's Solution. When first seen by me in January, 1917, he had a dilated heart from myocarditis, but with no valvular lesions; his liver was enlarged (dulness 12 cm. in mammary line), boggy and sensitive on palpation. There was no jaundice, but the skin was sallow. His teeth were in a necrotic condition from pyorrhoea alveolaris. Otherwise his physical examination was negative and both eye fundi were normal with no retinitis. He voided a total of 875 cc. of urine in the first twenty-four hours, with specific gravity 1032, acid, nega-

tive albumin, urobilinogen, sugar, bile pigments, diabetic acid and acetone, although there was a very slight reduction with Fehling's Solution and a plus six indican by Salkowski's test.

After free purgation, a low proteid diet even with an abundance of sugar, he failed to show any sugar in his urine by polariscopic examination during his entire stay of six weeks in New Orleans, while his liver dulness diminished to 8 cm. in the mammary line and all sensitiveness in this region had disappeared. Treatment was directed toward overcoming his intestinal toxemia and thus resting the liver. I have received a letter from him only during the past ten days, in which he states, "I am feeling fine, weighing about 180 pounds and seldom find a trace of sugar. Am eating everything." The putty stools in this case suggested involvement of the gall bladder with probably slight pancreatic involvement also, but after coming under my care there is no doubt but that his liver and intestinal toxemia were the dominant factors in his case.

These two cases are representative of eighteen similar cases seen by me in the past six years, and the results obtained warrant my advocating a definite plan of treatment for such cases; but it is well to bear in mind that no two cases can be treated exactly alike.

TREATMENT.

Where a poorly functioning liver has been ascertained to be present and there is evidence of intestinal toxemia, before instituting Allen's starvation treatment in cases of glycosuria, it is justifiable to give an initial purgative, prohibit all animal protein, and allow an abundance of cereals, fruits and vegetables. I would again remind you that milk should be withheld in all cases of intestinal toxemia for at least two weeks. In such cases as I have tried to represent the sugar should disappear from the urine in from 24 to 48 hours and treatment should be continued for at least two months towards overcoming any tendency to intestinal toxemia. It is not in the scope of this paper to undertake a consideration of this broad subject, but I will state that I have obtained good results from a capsule three times daily of Acid Sodium Oleat 2 grs., Phenol Phthallein 1 gr., and Sodium Salicylate 2 grs. An active culture of the *Bacillus Bulgaricus* when properly administered is of undoubted benefit, and should be given one hour before meals, when there is least acid in the stomach, as I have found that a free acidity of 18 will kill the organism in five minutes. Two good tablets should be crushed in a quarter of a glass of water and a teaspoonful of lactose added so as to furnish food for them to grow upon. The choice of laxatives will vary with the individual, but my favorite is a confection of raisins, dried figs

and senna leaves, with mineral oil next in favor. Enteroptosis should be corrected with a suitable abdominal supporter, and cecal stasis due to a chronic appendix should be relieved by surgical measures. Exercise should be insisted upon in all cases unless it is contraindicated on account of a weakened heart muscle.

I do not wish to be understood as opposing the starvation treatment of diabetes, but I have always considered that it should be attempted only in certain selected cases, and now feel more certain than ever that not only is it unnecessary, but that it may actually do harm in inexperienced hands in certain cases of glycosuria which are non-diabetic.

SUMMARY.

1. The patient should not be placed upon the starvation treatment until it is ascertained that diabetes positively exists.

2. There are certain cases of alimentary glycosuria, due to faulty liver function and intestinal toxemia which may be relieved by treating the latter condition.

3. In such cases the carbohydrate metabolism is a relatively unimportant factor.

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DISCUSSION OF PAPER BY DR. EUSTIS.

Dr. Randolph Lyons: In my experience, glycosuria of non-diabetic origin is rare, except transient types. There are many causes of glycosuria, besides those of hepatic origin. It is important to eliminate all such before branding an individual as a diabetic and putting him on the Allen treatment. I have come across only one case as Dr. Eustis describes, and I have been most interested in his paper. It must be remembered that a diabetic will tolerate considerable starchy food, providing his proteins are greatly reduced, without having glycosuria. His blood sugar, however, may be above normal and he will be potentially a diabetic.

Dr. Eustis (in closing): I think it is possible, Dr. Lyons in his experience has overlooked some of these cases of diabetes, resulting from

hepatic causes. I think those cases where there is a marked enlargement of the liver, and evidence of intestinal toxemia can be properly relieved of the glycosuria by instituting proper treatment for that source. Recites case, showing that by giving free sugar and a liberal carbohydrate diet without any evidence of increase amount of glycogen in urine. I think that the proteid element, as a causative agent, this class of cases should be studied and properly interpreted.

THE SELECTION OF DONORS BY GROUPING FOR BLOOD TRANSFUSION.*

By ELIZABETH BASS, M. D., New Orleans.

It is now generally recognized that iso-hemolysis and iso-agglutination constitute a source of danger unless a donor is selected who belongs to the same iso-agglutinin group as that of the patient.

Moss¹ states that many transfusions have been performed between members of different groups without untoward results, but that a sufficient number of "accidents" are on record to remind one that an element of danger exists, and the majority of transfusionists, to-day, recognizing this danger, take the trouble to select donors belonging to the same group as the patient. Moss, also found that all normal and pathological bloods alike could be classified into four groups by agglutination tests of the serum against the corpuscles.

The serum of an individual may or may not contain an iso-hemolysin; but if an isohemolysin is present, it acts in accordance with the laws governing the action of the iso-agglutinins. The serum of Group I which contains no iso-agglutinin, never contains an iso-hemolysin. The serum of Group II may or may not contain an isohemolysin, but if present it acts only on the corpuscles of Groups I and III. If the serum of Group III contains an isohemolysin, can act only on the corpuscles of Groups I and II, while isohemolysin occurring in the serum of Group IV may act on the corpuscles of Groups I, II, and III.

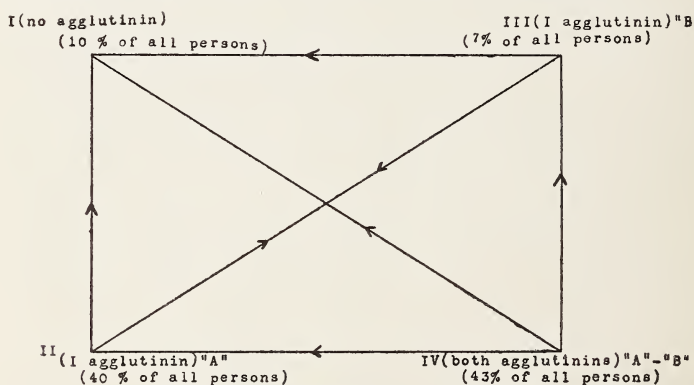
Consideration of this classification shows that if transfusion is performed between members of the same group, the danger of iso-agglutination and isohemolysin is obviated; but if the patient

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and donor belong to different groups, the possibility of danger is present.

It is preferable but not always necessary in transfusion that donor and recipient belong to the same group. The essential, however, for safety is that the serum of the recipient should not agglutinate the corpuscles of the donor.

The method employed for determining the compatibility of patient and donor with reference to iso-agglutinin and isohemolysin consists in testing serum of the patient against the corpuscles of each of the prospective donors, and the serum of each prospective donor against the corpuscles of the patient. Any person whose serum does not agglutinate the patient's corpuscles and whose corpuscles are not agglutinated by the patient's serum belongs to the same group as the patient and is a suitable donor as far as isohemolysin and iso-agglutinin are concerned.



SANFORD'S DIAGRAM OF THE MOSS AGGLUTINATION GROUPS.

Sanford² suggests a diagram, which is here reproduced, that is easily understood if, as he says, we accept Lansteiner's idea regarding the number of agglutinins, *i. e.* the serum of Group II contains Agglutinin A, and that group III contains Agglutinin B, while group IV contains both Agglutinin A and Agglutinin B. Group IV then agglutinates the corpuscles of Group II by virtue of its Agglutinin B and its Agglutinin A acts on the corpuscles of Group III.

The diagram tells at a glance to what group a person must belong in order to be a suitable donor for an individual of another group. If the arrow points toward the patient's group, and away from the group of the donor, the transfusion may be done without

what Brem has called "anaphylactoid" reaction. The arrows point in both directions on the diagonal connecting Groups II and III and blood in these reciprocal groups should not be interchanged.

It has been found that 10 per cent. of all persons are in Group I, 40 per cent in Group II, 43 per cent. in Group IV, and only 7 per cent. in Group III.

100 per cent of individuals are suitable as donors for Group I patients, 83 per cent. for those in Group II, 50 per cent. for those in Group III, and only 43 per cent are available for Group IV patients, as Group IV patients must have donors of the same group.

No serum agglutinates corpuscles belonging to its own group and if one has a known Group II or Group III blood, it is not difficult to determine the group of any other blood by testing the known serum against the unknown corpuscles and the unknown serum against the known corpuscles. It is believed by the various investigators that the group reactions are permanent characteristics. In fact, Brem and Zeiler³ observed the reactions of several different individuals over a period of six years and saw no change.

Moss⁴ grouped the bloods of 213 individuals, 97 of whom were healthy and 116 were diseased. 22 healthy individual's bloods were tested from two to five times, at intervals of a few days, weeks or, months. The agglutinating action of these serums were found to be constant. Moss found, also, that the individual's group reaction is not established at birth, but that it is established in 85 per cent. of children between the ages of 1 and 2 years, though it may not be established completely until 10 years or more.

Only a small quantity of blood, such as can be obtained from a puncture of the finger tip, is required for the test. Five or six drops of blood from Group II or Group III blood is collected in a small, dry, clean test tube or capillary pipette and allowed to clot. One or two drops of blood are collected in another tube containing 1 c. c of 1.5 per cent. sodium citrate in 0.9 per cent. salt solution for the corpuscle suspension. The unknown blood is collected in the same way in two similar tubes. Equal parts of the serum and corpuscles suspension are placed on a cover glass and carefully stirred with a small glass rod. This is inverted over a hollow glass slide and rimmed with oil and examined under

the microscope. Agglutination, if it occurs, takes place at room temperature and, usually, within five minutes.

I have grouped the bloods of 55 persons and in but three instances had occasion to change the first grouping. More than half the number were diseased bloods, representing such conditions as malaria, typhoid, influenza, pneumonia, secondary anemias from various causes, carcinoma, syphilis, et cetera.

My blood happens to be in Group III and I have been able to group all of the serums and corpuscles against my group.

Over three hundred tests have been made on the 55 blood and in fully 90 per cent. of instances the bloods were grouped against other Group II and Group III bloods as they were found.

Two brothers showed different group reactions and on testing the parents bloods found that one son's group corresponded to that of the mother while the other son's group followed that of the father.

The group reactions proved the same in four members of my own family.

The technic is simple and it does not require a great deal of time to group the donors. According to many transfusionists a certain amount of danger to the patient can be avoided by careful selection of the donors.

Ottenberg and Kalinski⁵ state that accidents due to the occurrence of hemolysis and agglutination of donor's blood-cells by the patient's serum, or vice versa, can be absolutely excluded by careful preliminary blood-tests. No accidents occurred in their 125 cases.

Sydenstricker, Mason, and Rivers⁶ have reported one hundred transfusions on 34 different persons and of this number they had trivial symptoms in 17 per cent. of the cases. In every case the bloods were compatible by the routine tests. One patient was given 9,000 c. c. of blood within two months' time without any severe reactions.

Lewisohn⁷ reports having used the citrate method of blood transfusion in 30 cases, 7 of whom were children ranging in ages from 20 days to 7 years. In one case there was marked anaphylactic reaction after the first transfusion, though the blood used was from the child's mother; but after the second transfusion, for which a professional donor had been selected and properly grouped, there was no reaction.

Barnes and Slocum⁸ state in their report of blood transfusion in nine successful cases that no patient suffering from grave anemia particularly if due to hemorrhage should be denied the chance of recovery offered by blood transfusion, but that suitable donors should be selected.

I am indebted to Dr. A. H. Sanford of Rochester for blood of Group II and Group III patients, also for confirming my group number.

I want to say that it was at the suggestion of Dr. F. W. Parham that I made these tests and I wish to take this opportunity to thank him for his interest and help.

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DISCUSSION OF ELIZABETH BASS'S PAPER.

Dr. Parham: My interest in this subject was renewed at the Mayo Clinic. I was so much impressed with the method of transfusion carried out there, and with the way of selecting proper donors in cases to be transfused, that I suggested to Dr. Bass to take up this work. Undoubtedly their method of grouping donors is a very convenient way in institutions to facilitate the prompt carrying out of transfusion in urgent cases. Having a number of people properly grouped as to their agglutination, it is only necessary then to find out the group of the person to be transfused. While the haphazard selection of donors, without regard to the influence of the blood upon that of the recipient, may not often be followed by bad results, the occasional disaster admonishes us to take every precaution in such an important procedure, and this method of grouping will facilitate taking such precautions. Now that the citrate of soda method has been shown to be free of danger, transfusion will undoubtedly be resorted to more frequently than heretofore, owing to the ease with which this method can be carried out. By this method the blood to be transfused is mixed with citrate of soda in the proportion of .2 of 1 per cent. I think we all ought to feel indebted to Dr. Bass for showing the practicability of this method and its advantages.

Dr. C. C. Bass: It is important to be very careful that the serum of the donor does not produce deleterious action upon the blood of the

recipient; small quantities of blood may not produce any harmful results, though a very large amount would. It is likely that harmful results from transfusions may be overlooked and attributed to other causes incident to the illness of the patient, especially when the deleterious action is slow in manifesting itself. It often occurs that transfusion is performed for conditions threatening life. In such cases death following transfusion and actually caused by it would likely be attributed to the former disease or condition and not to the transfusion.

In view of these facts it is quite possible that harmful results from transfusion are much more numerous than is generally supposed. Therefore simple methods promising safety against them are of much importance. The paper calls attention very timely to the apparent incompatibility of a small per cent. of bloods. This is, however, large enough to justify the test.

Dr. Parham: The case reported by Dr. C. C. Bass shows emphatically the necessity of using a complete blood for transfusion. The proper selection of the donor would prevent such unfortunate results. Even Bernheim, who was somewhat careless in this respect at first, now takes the greatest precautions in the selection of his donors for transfusion. The occasional disaster should make us cautious.

Dr. C. W. Duval: I have enjoyed immensely listening to Dr. Bass' presentation of the subject of transfusion. I think the Doctor might have told us a lot more and not confined herself so strictly to the classification of the four bloods. A great deal has been said from time to time about the importance of transfusing the proper strain of donor's blood; otherwise untoward results are likely to happen from hemolysis or hemagglutination within the recipient. I doubt very much whether this is the true explanation of what actually occurs in the cases that show symptoms of distress from transfused blood. That we have differences for different animal species, is not to be denied, but I do believe that this is the case for individuals of the same species. Perhaps in the cases that show bad effects from transfusion, the trouble might be attributed to differences in the osmotic pressure of the two bloods. I would like to ask Dr. Bass if she has run across anything in the literature that stresses osmotic pressure as an explanation for the bad effects sometimes encountered in transfusion work. I would also like to know if in her studies she has seen mention of any careful histopathological studies from autopsy material in fatal cases.

Dr. Elizabeth Bass (in closing): I wish to thank the men who have so liberally discussed my paper. This paper was dealing entirely with the grouping of donors. I am therefore not prepared to go into the clinical results, or to be able to furnish any conclusions concerning same. Hematuria is rarely found as an indication of bad effects resulting from transfusion. Such cases as secondary anemia, pernicious anemia, marasmus, inanition, hemophilia, etc., are conditions in which transfusion has proven successful. I saw no records of autopsies in the various articles read. Much has been done and much is yet to be done in this line.

OPERATIVE INTERFERENCE IN POTT'S DISEASE.*

By PAUL A. McILHENNY, M. D., F. A. C. S., New Orleans.

When Albee and Hibbs independently, through their respective operations, drew attention to the possibility of markedly shortening the duration of treatment of patients afflicted with tubercular spondylitis, they laid the foundations of a surgical procedure that has proved most beneficial to many cases previously thought doomed to at least a permanent and unsightly deformity. Both operations were accepted enthusiastically by the majority of those interested in the treatment of such cases, and it was not long before reports of one or both operations were coming from all parts of the country, some with gratifying results, others scathing criticism. The favorable results were probably due to a careful procedure carried out by those who followed the teachings of the originators, while those who criticised probably thought the operations a *certain cure* for all cases of spinal caries in spite of what stage they might be in at the time the operation was performed, while at the same time disregarding the rules. Now that sufficient time has elapsed to prove the merits of the procedure, it has been quite generally conceded that operation is indicated in certain cases, and is as strongly counterindicated in others. Tubercular lesions in the vertebræ do not differ from similar foci in other articulations, and conservative treatment in hip and knee joint tuberculosis has proved absolutely that it is often possible to cure the disease so that a fair range of motion in many, and an almost perfect return of function in some may be counted upon. Such results, of course, depend primarily upon the stage of the disease in which one may begin treatment, and secondarily upon how carefully treatment is applied both by the surgeon and the family. If one undertakes to treat a case of hip or knee joint tuberculosis, which he is so fortunate as to obtain during the first stage of the disease, in which the articular surfaces are simply inflamed, and there is practically no bone destruction or abscess formation, he would hardly consider it justifiable to perform an ankylosing operation upon the joint and thereby forever eliminate the possibility of a return of motion in the joint, considering it of far greater advantage to the patient to obtain a result which allowed

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motion, if only to a slight degree, even if the treatment was to last one or two years, especially as he could fall back upon operation later on if necessary. But should the case be one in which there is marked necrosis or rapid abscess formation, it means that the cartilages have been so eroded or destroyed that a cure with only partial motion is extremely doubtful, and any procedure calculated to eradicate the disease, shorten the duration of treatment, and produce a serviceable ankylosed joint is justifiable. So in Pott's disease; if we find a case to be in the first stage, before the vertebral articulations have been eroded, before there is evidence of abscess or of the slightest deformity, or before the X-Ray shows marked bone destruction, we should hesitate a long time before we perform an operation which, if successful, will eventually ankylose that spine to a certain extent above and below the area primarily affected, and so sentence the patient to a permanent rigidity of the spine, and by so doing greatly limit his usefulness, especially as conservative treatment in early cases does result in cure with motion. However in the second and third stages of the disease where we find marked bone destruction, abscess formation, and in most instances certain deformity, such operations have true worth. I will not attempt to discuss the merits of the respective operations, and will limit myself to that one originated by Dr. Albee as I feel that it should be heartily endorsed. Although I have seen quite a number of patients afflicted with tubercular disease of the vertebrae, I have operated upon but four of them personally, the first in 1913, and the last two weeks ago; the most decided being a man of heavy build, referred to me by Dr. Graffagnino, who had been paralysed for several months by a tubercular caries of the mid-dorsal region. He was operated upon in May and is now able to walk about comfortably. When such an operation is contemplated the patient should be first placed in bed, stretched upon a Bradford frame, or some such device, so that the Kyphosis may be gradually corrected, and a position of Lordosis or "Hollow back" produced; this hyperextension of the spine separates the diseased surfaces of the vertebrae, and an almost immediate improvement in the general condition of the patient is seen. This position should be maintained until the patient is thoroughly comfortable upon the frame, or if pressure symptoms were present, until they disappear; he is then ready for operation. Although an Albee electrical bone cutting

apparatus is desirable it is not essential, and the procedure may be easily carried out with a broad chisel; such a chisel as I now present to you may be made from what is commonly known as a ship carpenter's "calking iron" if a double beveled edge is ground on it. One first determines the length of the graft to be taken from the interior surface of the tibia; the graft should be long enough to lap over the spinous process above and the process below the diseased area, and be fashioned so as to conform somewhat to the curve of the deformity so that danger of fracture from bending will be lessened. After shaping the graft it should be left in position until the time for transplantation has arrived. One next makes a long curved incision to one side of the spinous processes running from the second process above to the second process below the diseased section; the incision goes through skin and fascia which are dissected up till the processes are past; all bleeding points are carefully tied off and the aponeurosis over the processes is split and dissected to each side; the tips of each process is split with a heavy plaster knife which facilitates the introduction of the chisel; each process should be split to its base with sharp, decided strokes of the hammer so that unnecessary pounding upon the spine may be avoided; the sides of the split processes are forced apart, and the graft taken from its bed in the tibia and immediately placed in position with as little handling as possible; beginning at one end of the graft, heavy sutures of No. 3 chromic gut are passed through the erector spinæ muscles and between the vertebræ, or through the base of each process, each being tied immediately over the graft while an assistant holds the graft well down between the halves of the processes; when the graft has been firmly sutured into place the aponeurosis on each side of the processes is sutured continuously, and the skin wound is finally closed without drainage. After the dressings have been applied a long pad of gauze is placed on each side of the spine to prevent pressure upon the operative field, and the patient is carefully rolled upon the frame again; he should not be disturbed unless absolutely necessary, and should be kept upon the frame for several weeks, after which time a plaster of Paris corset may be applied and the patient allowed up; firm support should be maintained for at least six months after the operation. I can imagine one taking great satisfaction in having relieved a patient afflicted with paralysis due to spinal caries by operative interfer-

ence, but I can also imagine one taking equal or even greater satisfaction in having cured a case of Pott's Disease and at the same time preserved motion in the affected portion of the spinal column.

DISCUSSION OF DR. McILHENNY'S PAPER.

Dr. J. T. Nix: I enjoyed Dr. McIlhenny's paper very much indeed. I saw Dr. Allen a few weeks ago and secured from him the following synopsis of cases operated on by himself, as well as by thirty-three different surgeons:

Fred Albee, "*Am. Jo. Orthopedic Surgery*," March, 1916: A study of 539 cases of Pott's disease treated by the bone graft. One hundred and ninety-eight were the author's personal cases and the rest were performed by thirty-three different surgeons.

Conclusions: Of the total, 460 were cured, or 85¼ per cent; 59 cases were improved; 20 unimproved. Thirteen of the surgeons claimed 100 per cent arrest of disease.

Of Dr. Albee's cases, there were four deaths occurring within the first ten days post-operative, the cause being designated shock. Three of these were performed with the mallet and chisel. With his modern instruments, by using the electric motor saw, Albee performed the operation in fifteen minutes, without shock perceptible.

Ages of patients varied from twenty months to sixty-five years, the site of disease being anywhere in the vertebral column.

The early operation is strongly advocated as soon as a positive diagnosis is made and confirmed by the X-ray, as it shortens the operation, conveys less shock, fixes fewer vertebrae, and insures a more rapid recovery.

The operation, according to Albee, is applicable to all cases, at all ages, where pain or muscular spasm demands immobilization.

Robert Soutter, in his excellent book on *Orthopedic Operations*, just from the press, gives the following criticism: "In adults the operation is preferable to the brace or plaster treatment, as it shortens disability and the course of the disease. In children who live nearby and can be seen frequently, plaster or brace treatment is preferred. With paralysis, use recumbent treatment until recovery, then graft."

Dr. Danna: I am very much interested in the case that had paralysis. I would like to have Dr. McIlhenny tell us just what he found there on operation. Paralysis means pressure on the spinal cord, therefore it appears that the splinting process relieves this pressure. I think this operation is not done often enough.

Dr. E. Denegre Martin: These cases of Pott's disease are due to pressure and are as a rule relieved by extension. I recall a case brought to my service some years ago, a colored girl about twenty years of age, almost complete paralysis of lower extremities. We had no apparatus, so I hung her in the doorway, with a Boston bandage, for some time each day, in less than a week she moved her limbs freely, after the application of a plaster bandage she was able to walk around with perfect comfort. The great advantage of the Albee graft is that it ankyloses the desired point and thusly strengthens the spine at that point. Especially is this of assistance in adults as there is less liability to ankylosis in the rest of the spinal column from long confinement in a plaster jacket.

Dr. McIlhenny (in closing): As long as there is a chance of preserving motion, we should not ankylose the vertebrae by splinting operation. Many authors have taught us that operation can effect a cure in Pott's disease; however, we have no right to ankylose the spine when motion can be preserved.

In answer to Dr. Danna, I will say that the paralysis in most cases is due principally to inflammatory exudate and not to a great extent to long pressure.

REPORT OF SEVERAL CASES OF HYPOPHYSEAL DISEASE.*

By HENRY N. BLUM, M. D., New Orleans.

Mrs. T. M. P., Logtown, Miss., 40 years of age, came March, 1917, and complained of periorbital pains for one year and bad vision. Said she had been struck in the eye with a piece of wood one year before. Pupil in right eye slightly oval and conjunctival veins R. E. slightly engorged (pupils both eyes equal in size and react normally to light); vision R. E. 20-40 reading letters in the nasal field. Vision left eye 20-40. Examination with homatropin showed normal fundus both eyes except in the right eye the temporal portion nervehead slightly pale. Right hand, arm and leg larger than the left. Face broader than normal (patient says her face is broader than it was formerly). Upper, left, lateral incisor missing; lower teeth slant to right. On March 30, 1917, radiograph by Dr. Samuels shows very large sella turcica, this structure being several times larger than normal. Wasserman-negative. Patient returned September 18, 1917. Vision R. E. 20-200 doubtful, L. E. 20-70, some reading letters in nasal field.

Miss H. M., trained nurse, 22 years old, came July 11, 1916, complaining of pain in the right eye. Examination of R. E. showed the following facts—pupil 2 1-2 mm. L. E. pupil 2 mm. Anterior chamber O. U. normal. R. E. T+3, L. E. Tn. Fundus R. E. revealed typical glaucomatous cup. Vision R. E. normal, L. E. normal. The accompanying chart shows field for form almost normal. If color field would have been made some abnormalities would no doubt have been discovered. There was present naevus over right side of the face from neck to forehead with much less on the back of neck and front of neck, shoulder and chest. Right leg and arm larger than the left leg and arm. Accompanying radiograph shows change in sella turcica.

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Flora E., 12 years old, seen first two years ago. Came to Touro Infirmary on account of failing vision. This child presents naevus right side of face and neck. Irregularly distributed on the chest and back of both legs, more on the right leg, as may be seen by the accompanying photograph. Note the sharp line of demarcation on the raphe of the upper lip, showing the difference between the healthy and the unhealthy skin. The R. E. shows an absolute glaucoma biphthalmus. An Elliott phorophting was done on this eye for relief of pain, but without success. The radiograph shows the changes around the sella turcica.

The next case was that of a colored woman, who visited my clinic at Touro Infirmary and complained of a failing vision. Despite the fact that there was 20-20 vision in each eye, there was decided paleness in both optic nerves with narrow arteries. The accompanying radiograph shows the enormous sella turcica. Wasserman-negative. Perimetric examination shows abolition color sense in R. E. and some narrowing of temporal color fields in L. E.

I wish it understood that this is in no sense a paper, or rather I should say a treatise or discussion in general on diseases of the hypophyses, but only a report of several interesting cases which I thought you might care to hear.

DISCUSSION OF DR. BLUM'S PAPER.

Dr. T. J. Dimitry: Dr. Blum's paper is most apropos. It should be of interest to every man present, especially every eye man. Dr. Blum has given us very valuable information. Perimetric findings assist in making diagnosis clear in these cases. X-Ray examinations are of great assistance in diagnosis. Would like Dr. Blum to explain the absence of hemianopsia.

Dr. Blum (in closing): In my opinion there can be no confusion between these two kinds of patients. In the hypophysis, aside from the neighborhood symptoms, the remote changes of the body are very striking. So far as the perimetric findings are concerned, they are totally and absolutely different. In the one class of cases we find the typical, bitemporal hemianopsia, sometimes homonymous defects, sometimes unilateral amblyopia, and in the other class of cases we find the central and paracentral scotoma significant of re-trobulbar optic nerve inflammation.

THE AUTHOR'S DEVICE FOR THE LOCALIZATION OF FOREIGN BODIES BY MEANS OF THE X-RAYS.*

By AMÉDÉE GRANGER, M. D., New Orleans.

INTRODUCTION.

Early last summer, the highly esteemed Dean of the Graduate School of Medicine of Tulane University, Dr. C. Chassaignac, urged the members of his faculty to devote careful attention to the special needs of the Military Surgeon in the preparation of their course for the next session of the School. Accordingly, I investigated as thoroughly as I could the reports which had appeared in the American, French and English X-Ray Journals on the subject, "The localization of foreign bodies by means of the X-Rays," as practised on the European battlefield.

The result of that study can be summarized briefly, as follows:

1st: The fluoroscopic method of examination is almost universally employed;

2nd: The number of trained and experienced Radiologists is far below what is needed;

3rd: All the devices employed for the localization are accurate, and all make use of the well known law of triangulation;

4th: The number of the devices in use is about in proportion to the number of expert radiologists in the service, as most well known radiologists employ either their own devices or their modifications of some one else's device;

5th: The large majority of these devices are complicated and require for their proper use a technical knowledge and skill not possessed except by the highly trained radiologist;

6th: With the large majority of these devices the time required for the localization is too long for them to be of very great service except at base hospitals far in the rear of the battlefield where time is not such an important factor;

7th: In spite of the comparatively large number of devices already in use there seemed to be plenty of room for one which would be simpler in construction and so simple to use that any physician, having no previous experience with the X-Rays, could master the technic of its use in a short time; and requiring so few manipulations that the localization could be made with it within a very short time.

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As a result of experiments carried on in my laboratory during the last few months, I am ready to present to you at this time a small device which fills all these requirements of accuracy, speed, and simplicity.

DESCRIPTION.

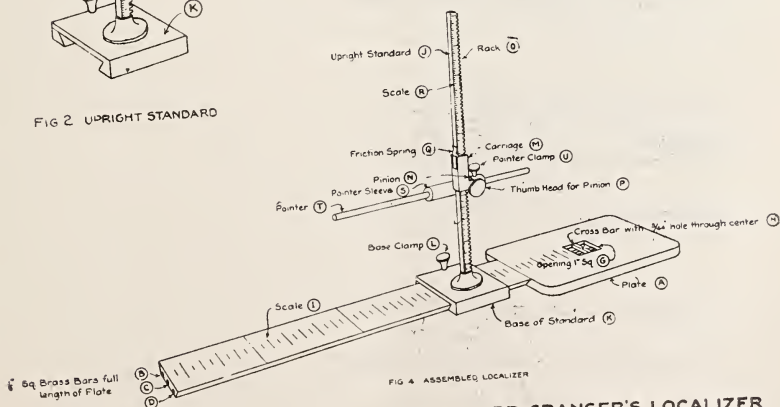
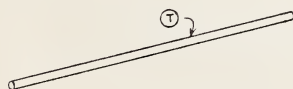
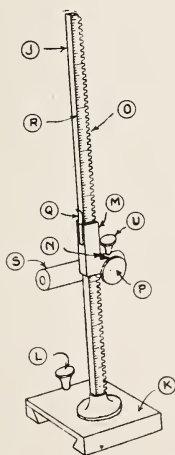
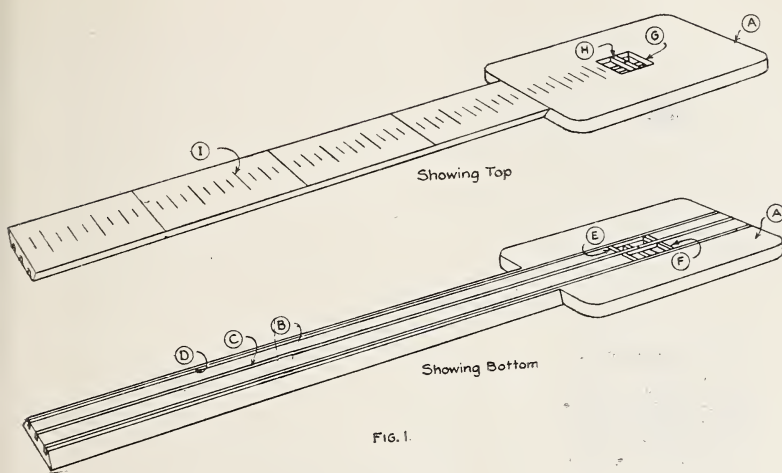
The localizer consists of three parts, plate (Fig. 1), upright standard (Fig. 2), and pointer (Fig. 3), which can be quickly taken apart for transportation and as quickly assembled (Fig. 4) for use.

Plate (Fig. 1) is made of one-quarter inch aluminum with a square opening at (G.) Within this square is a cross (H) formed by two pieces of one-eighth inch bars intersecting at the center of the square, and having a small hole (H) through the center of the point of intersection. On the under surface of the plate (Fig. 1) are three guide lines (B. C. D.) made of one-eighth inch bars, these lines form two of the sides of the square (G) and one arm of the cross (H.) The other two sides (E. F.) of the square and the other arm of the cross (H) are formed by smaller and similar pieces of one-eighth inch bars. On the upper surface of the plate (Fig. 1, I) is a scale graduated in one-quarter inch divisions, beginning at the small hole (H) in the center of the metal cross (H). One portion of the plate is cut and shaped to receive the base of the upright standard (Fig. 2).

The upright standard (Fig. 2) is a machined rack (O) fitted to a base (K) which is movable on plate (Fig. 1) and can be fixed at any point on said plate (Fig. 1) by means of thumb-screw (L). On one side of the standard (R) is a scale graduated in one-sixteenth inch divisions. A small carriage (M) is movable vertically on the rack (O) by means of pinions operated by milled thumb-head (P). A small spring (Q) makes sufficient pressure on this standard (Fig. 2) to prevent slipping of the carriage (M). The carriage (M) holds a sleeve (S) to receive pointer (Fig. 3).

The pointer (Fig. 3) can be moved horizontally within the sleeve (S) and fixed at any desired point within it by means of the thumb-screw (U).

When the three parts are assembled (Fig. 4) the pointer (T) is held directly over the middle guide (C). The pointer (T) can be moved along this guide (C) in the direction of its length,



DR. GRANGER'S LOCALIZER

11-20-17



FIG 5. SCREEN APPEARANCE AFTER FIRST STEP



FIG. 6. SCREEN APPEARANCE AFTER SECOND STEP

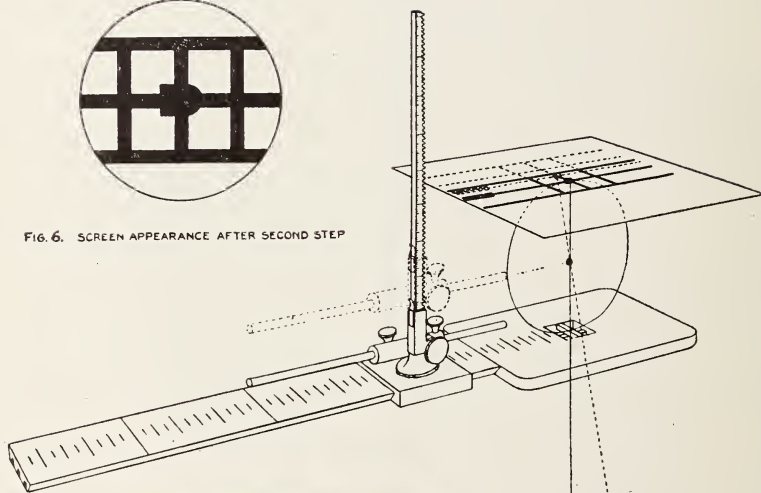


FIG 7. SCREEN APPEARANCE AFTER SECOND STEP ~ DIAPHRAGM OPEN,



FIG 8 SCREEN APPEARANCE AFTER THIRD STEP

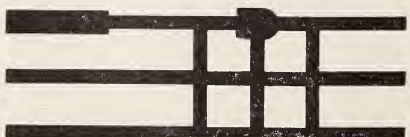


FIG 9 SCREEN APPEARANCE AFTER FOURTH STEP

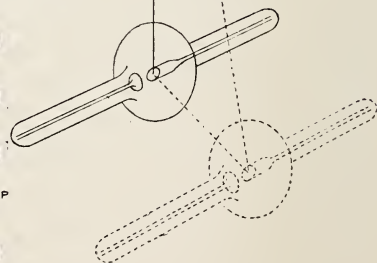


CHART ILLUSTRATING
PRINCIPLE AND USE
OF
DR. GRANGER'S LOCALIZER

11-20

by sliding the base (K) of upright standard (J) on plate (A), and it (T) can also be moved to and from the plate (A) by turning milled thumb-head (P) which causes the carriage (M) and sleeve (S) to move up or down the upright standard (J). The distance from the end of the pointer (T) to the point of intersection of the cross arms (H) is read on the scale (I) on the upper surface of the plate (A). The distance from the center of the pointer (T) to the upper surface of the plate (A) is read off on the scale (R) on the upright standard (J).

TECHNIC OF OPERATION.

To locate a foreign body it is necessary to have besides the assembled localizer a transparent top table, and an X-Ray tube held in a holder or box provided with a diaphragm, placed under this table and capable of being moved along the longitudinal axis of said table. The range of this movement need not be great, twelve inches will suffice for all cases. The patient is placed on the table, the wounded part lying over the X-Ray tube box or holder, and a fluorescent screen is placed over the patient.

The technic for the operation of my device can be divided into *four* short steps, as follows:

FIRST STEP; The diaphragm of the tube containing box or holder, having been previously closed so that a circle of fluorescence only about two inches in diameter, would appear on the screen, the tube is moved until the shadow of the foreign body is seen lying in the very center of this small fluorescent area (Fig. 5).

SECOND STEP; The localizer is slipped under the patient, that is, between the patient and the table, until the shadow of the foreign body is seen lying over the intersection of the cross within the square hole in the plate (Fig. 6).

THIRD STEP; The diaphragm of the tube containing box or holder is opened (Fig. 7) and the tube moved until the shadow of the foreign body leaves that of the central guide or central arm of the cross and assumes an identical position with reference to the shadow of one of the lateral guides (Fig. 8).

FOURTH STEP: The pointer chart is now raised by turning the milled thumb-head (Fig. 4, P) until its shadow moves over to and very nearly blends with that of the lateral guide mentioned in the preceding step (Fig. 9).

The pointer now lies on a plane with the bullet and indicates its depth in the tissues. These four steps were made in forty-five seconds in the case reported in this article. The pointer can now be pushed against a side of the part being examined and made to press against it (chart), marking it temporarily, and a needle passed through the small hole in the center of the cross (H), can make a temporary mark at that point of the patient. Both of the points can be marked later with a pencil of nitrate of silver, the one opposite the needle point would indicate a line passing vertically through the foreign body, the other mark opposite the pointer a line passing in the plane of the foreign body, that is, on a line with its depth in the tissues. Reading on the scale on the upright standard this depth is indicated in divisions of one-sixteenth of an inch. Now lowering the pointer and reading the scale on the upper surface of the plate the distance of the foreign body from the side of the part can be noted in divisions of one-fourth of an inch. Marking the skin and reading the scales could hardly consume more than fifteen seconds or at the outside, thirty seconds, so that the whole procedure including the localization, would take less than one minute and a half.

The chart explains the law employed—Law of Triangulation—and shows also the *modus operandi*. The solid lines indicating the first position of the tube and the pointer and showing the path of the rays and the relative position of the shadows as they appear on the fluorescent screen. The dotted lines indicating the changed positions of the tube (Step 2) and finder (Step 3) and showing the new path of the rays and the new position of the shadows as they would now appear on the fluorescent screen.

REPORT OF CASE.*

By E. L. LECKERT, M. D., New Orleans.

When Dr. Granger advised me that he was preparing a device for the localization of foreign bodies, I suggested that we test it, when completed, on a patient with a bullet in his hip, which Dr. Friedrichs and I had made an unsuccessful attempt to remove. This patient, a stocky, muscular boy of 19 years, was shot acciden-

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tally about a month and a half prior to the operation by a person standing twenty feet away, facing his right side. The bullet, a 32-caliber, entered the right hip one and a half inches below and one and a half inches posterior to the anterior-superior spine of the ilium. An X-Ray (anterior-posterior) located the bullet on the ilium just above the head of the femur. Being assured that the picture designated the bullet as being anterior and as the patient complained of tenderness under Poupart's Ligament and thought he could feel the bullet in this location, we felt confident of locating the bullet in this region.

After a thorough search of about an hour and a half through a large incision, we were unable to locate the bullet. A piece of silver wire was inserted in the wound, its end resting against the ilium where we thought the bullet should be and an X-ray requested taken in a semi-lateral position, and as the vertical rays fell in the same plane as the wire, the loop of wire outside the wound was all that appeared in the picture, and no further information was obtained as to the location of the bullet.

With the localizer described, the bullet was shown three and a half inches back of the incision which had been made on the lateral aspect of the hip and was on the posterior aspect of the ilium. Numerous tests corroborated the first findings and it was possible to measure the depth of the bullet, from both directions the posterior-anterior, two and a half inches, and lateral three and a half inches. These findings were marked and on incising over the posterior mark on the buttock, I was able to immediately put my finger on the bullet in the spot designated by the localizer. The measurements were taken and corresponded absolutely with those given by the localizer.

The localizer is simple in its operation, and foreign bodies are rapidly located. I do not hesitate to state that it does not require an expert to use it. Dr. Friedrichs was present at these tests and I am sure he will substantiate my statement that after witnessing a few demonstrations any intelligent person could use it. I repeatedly timed Dr. Granger, who was able, with the localizer under the patient, to locate the bullet in one-half minute.

EXEMPTION BOARDS AND THE MEDICAL MEN IN MAKING AND KEEPING UP AN ARMY.*

By LUTHER SEXTON, M. D., New Orleans.

Exemption boards are bodies of men co-operating to select a suitable army out of ten million citizens to win the victory for democracy. Our government and state owe a duty both to the dead and the living and also to the generations which are to follow. As medical men we have to do our part in assisting the army so that democracy shall not perish from the face of the earth and so that the ocean shall be free again. If our selection is bad in picking men for this work, we cost the government the expense of transporting a man, who is found deficient upon first trial at the cantonment, and do the individual an injustice. While all the aids to diagnosis should be used when possible, it must still be the clinician who can select the good from the bad virtually at sight without the aid of laboratory or refinements in diagnosis; they are to separate the ten million into the two classes of the fit and the defective. Men can only be maintained at their best physically when they are examined frequently; the leaky heart valves must be rested, the diet, exercise and drink must be regulated to reduce nephritic diseases, as heart and kidney lesions have increased thirty per cent. in recent years and now lead pneumonia in fatality. The United States must conserve its man power by every possible means. France has already lost more men in this war than she gained in birth rate since 1870. We must win this war by conserving the food and health at home as efficiently as we expect the army and navy to be on land and sea. Our doctors and soldiers are going to France to meet a shrewd military enemy, who has been preparing for this supreme test for half a century;—who are thoroughly equipped and well dug in. There should be no room for slackers or discontents left at home, but to the limit of our ability, moral and financial, we should back up our brave soldiers and allies who are going over the top to “No Man’s Land,” many of them never to return again. On account of its being fought on foreign soil, the war is not as popular as it would be if the United States were invaded; on this account, our exemption boards in some instances have toiled all day to certify only

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six soldiers. As found in the parable of the wedding feast the conscripts made many excuses;—one was so necessary to his business that it would go to destruction without his guiding genius;—another desired to escape on religious scruples, and the commandment “Thou Shalt Not Kill” as if our enemy was remembering the sixth commandment;—but the far greater part of those claiming exemption had married a wife, only after the draft law had gone into effect; so unwillingness on the part of many to volunteer property and person for the country’s defense is in a way affording aid and comfort to the enemy.

Dr. Crile, just back from a base hospital at the front, says that the Central Powers are not nearly exhausted, that the war is not half over, that German prisoners are found to be well nourished, clothed and armed. He says there is no glimmer of dawn on the war’s eastern horizon. If one million of our citizens are to be sent to the front, ninety-nine million should be conserving, working and saving at home. At the beginning of the war, in the United States only 2 per cent. of the medical men needed were in the service, whereas three-fourths of the British and French medical men under fifty are at present in uniform. If the United States send doctors to the service in the same proportion as Great Britain and France, we will have to send forty seven thousand instead of twenty-two thousand. Such exaggerated statements have been made about mortality among doctors at the front that it might be of interest to you to know that during the past three years of war only two hundred and sixty-six medical men of the British army have been killed outright and only one thousand two hundred and thirty-four wounded out of twelve thousand in service. The sanitation advised by medical men made the building of the Panama Canal possible after the French had failed to build the same, and our medical men in the army are playing no less important part by the prevention of typhoid and para-typhoid, small pox, malaria, typhus fever and tetanus.

Our local board number 10 called six hundred and seventy-six registrants, examined six hundred and thirty-seven, rejected one hundred and eighty, equivalent to twenty-eight per cent for causes as follows:— Weight and general conditions, suspt. T. B.—45, Heart— 30, T. B. Second and third stages—6, Acute Genito-Urinary—4, Feet—2, Eyes—29, Hearing—11, Teeth—1, Acute Syphilis—4, Paralysis—2, Mentally deficient—7, Hernia—18, Epi-

lepsy—2, Hemorrhoids—3, Loss of fingers—3, Legs—7, Arms—4, Goitre and Aneurism—2, Atrophy of limbs—3, Total—180.

It has been estimated that eighty per cent. of our colored population are luetic, and our ignorant and bibulous white population is a close second in this disease. Since typhoid, para-typhoid have been eliminated venereal diseases in one form or another have been the great disturbing factor of the army;—hence the insistence of the army and navy on placing no cantonment near a town or city with a legalized vice district. Segregated vice is often more damaging to an army than the bullets of an enemy. Every soldier who is out in a segregated district at night is expected to take a prophylactic injection upon his return to camp, but the rule is more often evaded than complied with because it is a demerit against a man to so report. Syphilis and its complication has been classified among the five best killers. It not only attacks all the soft tissues of the body, but honeycombs the nervous and bony structure, thus causing many rejections. While we found a few instances of acute syphilis and gonorrhea in the first stages, we saw many more in the second and third stages and especially was this true, of heart and nervous lesions in which tachy-cardia was the rule rather than the exception. Syphilis and gonorrhea are the national epidemics among soldiers exposed to the red light districts in any country. It is a well known fact among internists that when they are in doubt about a heart lesion to give the patient the mixed treatment, which is often followed with a remarkable improvement. Our profession as a body should stand for the abolition of all segregated districts. An educational campaign by lectures, good moving pictures, such as “Damaged Goods” and sex hygiene in which prudery is put to rout and in which venereal diseases are not treated as if no more important than an ordinary bad cold, but on the contrary in which the public should be made to know that any treatment for syphilis not covering a period of at least two years or after several negative Wassermanns, is quacking pure and simple.

The great expense of training a citizen into a soldier and transporting from home to cantonment is an unnecessary trouble to the government unless the exemption boards in the beginning have selected a subject suitable for the service. It would not be amiss in my judgment if the exemption doctor vaccinated the soldiers at their first successful examination against small pox, typhoid and

para-typhoid; the soldiers would then be practically ready for training when they arrive at the cantonment. No effort should be spared by the sanitary and surgical directors of the army to offer the soldiers the very best chance in the way of healthy environments and good hospital accommodations. Our profession at the front should do its work so well that every limb possible should be saved and every fracture so scientifically treated that few deformities result. The army standards do not exact a perfect physical man and the exemption boards have been so instructed, but in trying to make this army of a million, the unfit found between the ages of twenty-one and thirty-one, has averaged from thirty to forty per cent. Among the principal causes are sight, bad teeth, light weight, defective lungs and heart, hernia, and luetic diseases. If one-third of our young men are thus diseased, what must be the percentage beyond thirty-one in our general population?

It should be the object and desire of our medical profession, who are unfortunately left at home to render fit all these minor defects in order to fill in the future drafts in the army. To the campaign before the public against cancer, T. B., and luetic diseases should be added the correction of all minor defects bringing up the physical standard of our citizens to the fitness for the army and navy, as well as the greater duty to be the fathers of coming generations. Now is the psychological moment for the general public to back up the medical profession in correcting these minor defects that now excuse one out of every three persons for military service. There should be no permanent exemption for refraction cases, minor surgical defects as hernia, hammertoe, hemorrhoids, bad teeth and many other conditions curable by minor surgical operations, and cutting down on the excessive use of tobacco and liquor in order to slow down the exaggerated pulses.

Wine, bad women and venereal diseases come in natural sequence; the medical profession therefore should stand as one against the excessive use of alcoholic beverages and exposure to commercialized vice, so that our young men who return from the war shall not be shot to pieces by venereal diseases. It may seem a hard thing to say but it would be better for the future of America if no serious syphilitic person return from the war to entail his misery and disease upon unborn generations at home. The greatest danger to a young soldier in a wide open cantonment

is not bullets but the temptations that go with and overcome his feeble resistance to the lust of the flesh.

The way we detected malingerers, who claim that they could not hear was by asking questions at a distance of twenty feet with their backs turned and one ear covered. "Do you not feel that the oceans should be free to travel and that the United States have been outraged? Do you not want to back up our President? How much did you give the Red Cross, Y. M. C. A. and K. C. drive?" Then suddenly ask at a lower tone of voice, "On what grounds do you claim exemption?" "Are you not the only support of your family?" In this way, you will get an answer to a lower tone of voice. We always referred to the clinic or doctors who have been treating a man's eyes or ears, for information, but as this work was gratuitous we sent eye and ear cases, which we could not determine, to the office of a specialist instead of asking them to lose from four to six weeks time from their practice. Tobacco and whiskey hearts and excitement of the examination account for many having fast pulse, for which due allowance must be made. If there is no organic murmur, or only a functional nervous disturbance or anemic murmur, army training, regular food, sleep and cutting the allowance of the chain smoker and regular tippler, will often reduce the fast pulse to normal. About the best thing that can happen to the confined office man who really never has any exercise, harder than inhaling a cigarette, is to send him to the army camp, cut out his booze and cigarettes and watch him grow under regular exercise, proper and well cooked food, and sufficient sleep. Our climatic conditions and cosmopolitan forbears make our soldiers ten to twenty per cent. lighter in weight than soldiers in colder climates, and from more hardy races. However light weight is not so much an objection when we remember that ex-Confederate General Wheeler and Winston Spencer Churchill were only slightly above the hundred and ten pound limit. Again, having no excess avoirdupois ought to enable a man to advance and retreat with more ease. The real hard question for the medical examiner to determine is whether this light weight is dependent upon heredity, environment, lack of sufficiently and properly cooked food, or whether it is caused by lung or some other serious disease. The medical examiner should be a good clinical diagnostician, more handy with his stethoscope, and urinalysis, than the more refined diagnosis of the laboratory and microscope,

which, in examining from fifty to seventy men per day, the doctors have very little time to use. We found many first stages T. B. cases who did not know themselves afflicted with the disease, but fortunately they were in the curative stage, if they heeded the advice given them, which was at once to consult their family physician about the proper diet, medication and mode of living. On account of our warm climate, many T. B. cases from colder climates come to live in New Orleans and our own population and T. B. Houses already contain perhaps five thousand open and ten thousand concealed cases. Our general death rate from consumption in the United States in one year amounts to as many men as we now have on the French Battle Field. Our million and a half consumptives in America call for twice as many beds as in all of our cantonments combined; so with physical signs of T. B., light weight, anemia, and evening temperature such cases should not be sent to the cantonment where they will prove a liability instead of an asset to the army.

In concluding, we wish to say that the medical men of the exemption boards have the unqualified help and support of the lay members, and the enclosed clipping gives Provost Marshall General Crowder's estimate of the boards efficiency.

General Crowder pays tribute to the zeal and patriotism of more than thirty thousand men who compose the machinery of the selective system. With only ten weeks for the task, the first national increment of six hundred and eighty-seven thousand was drawn, he says, by a nation "moving breathlessly, supported by the governors of the states and by the members of the selection boards with a patriotism, devotion and unselfish zeal that remains an inspiration." "You are, in effect," he added, "a part of the army of the United States, in that you are the source of its supply. The nation is rapidly becoming a great system, and, if this part of it were disturbed, it is not too much to say that the system would be shattered so effectively that it would take weeks, if not months, to repair the damage."

Dr. A. G. Friedrichs presented the following case:

Male, colored, fracture of mandible at the angle. The Doctor maintained that a fracture of this type, can only be handled by wiring, to bring the teeth in correct occlusion, so that that mandible will perform its normal function as before.

PROCEEDINGS OF THE AMERICAN SOCIETY
OF TROPICAL MEDICINE

ADENOMYCOSIS.*

By DR. EZEQUIEL C. DIAS,
The Oswaldo Cruz Institute (Bello Horizonte Branch), Brazil.

(Translated for the JOURNAL by Dr. A. McShane, Greenwood, Miss.)

Having been courteously invited by this learned Society to read a paper on some subject relating to tropical pathology, it occurred to me that it would be better to present a collection of personal ideas and investigations instead of a question full of controversy.

It must be stated, however, that my thesis does not deal exclusively with tropical medicine. It relates, rather, to an ailment that does not exhibit climatic preferences, but forcibly attracts the attention of physicians who work in warm climates, especially in the State of Minas Geraes (Brazil), in the capital of which (Bello Horizonte) the Oswaldo Cruz Institute maintains an affiliated laboratory.

The affection referred to is Pseudoleukemia, also called Hodgkin's Disease, Lymphogranulomatosis, etc.

When I undertook the etiological study of this disease I was unacquainted at the time with some valuable works on this subject that had recently been published.

At about the same time other publications appeared in the United States and Germany, which were all in accord as to the bacterial nature of the disease. Among other authors, Fränkel and Much, Bunting and Yates, Negri and Mieremet, Billings and Rosenow, F. Blacke, H. Fox, Verploegh and Kehrner, etc., seemed to demonstrate that the etiology referred to was due to a bacterium, to which was given the name *Corynebacterium Hodgkini*, or *Bacillus Hodgkini*.

However, that was not the conclusion that I reached. According to my studies, the germ of the disease was a polymorphous fungus, found in the affected lymphatic glands, and even in the peripheral blood of the patient.

This disagreement in results—those of the foreign investigators and my own—led me to believe for a while that the morbid entity

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prevailing in Minas was not the same Hodgkin's disease that was investigated in Europe and North America. Hence, I was driven to the necessity of distinguishing the two things, thus reconciling the apparent discrepancy in the two series of studies. I then wrote a preliminary note, in which I advanced the hypothesis that my clinical cases were of a disease not previously described; and, as it was then impossible to resolve my doubts immediately, I decided to call the disease Minas: *Adenomycosis endemica*.¹

At the present time, however, there is no room for any such doubt. In every respect the two diseases are the same; the clinical descriptions correspond to each other, and I do not hesitate to affirm the universality of the nosological type which Hodgkin was the first to describe.

In spite of the consideration due to the foreign writers already mentioned, I cannot efface the studies which I have modestly undertaken. I am convinced that we are dealing with a mycosis; and, while I await an opportunity to compare the material of the North American investigators with my own, I hope and expect that we will arrive at the same conclusion; that pseudo-leukemia is due to a fungus.

At the same time, I see no reason for withdrawing the name of *Adenomycosis* from Hodgkin's disease, since it seems to express and emphasize the preponderating elements of this disease.

Furthermore, another fact of great importance deepens my conviction in regard to the mycotic nature of Pseudoleukemia, and that is that a series of investigations which I carried on with the view of clearing up the etiology of leukemia,² I reached the conclusion that this latter disease is also due to a fungus, which I called *Adenomyces leucemiæ*, the resemblance of which to the germ of *Adenomycosis* is truly remarkable.

This matter does not come within the purview of the present paper, and I reserve it for another occasion. In any event, this slight reference scarcely serves to demonstrate that the harmony that exists between the morbid processes of leukemia and pseudo-leukemia is also confirmed by etiological analogy.

ETIOLOGY.

In an article which will be published in the Memoirs of the Oswaldo Cruz Institute there will be shown drawings and other illustrations which will explain the text of the work referred to.

In the impossibility of explaining now the etiological part, I will merely give a summary of its most characteristic features.

By puncturing a hypertrophied gland (one that is covered and without the least sign of suppuration), under strictly aseptic precautions, we can find in the ganglionic juice a series of polymorphous microbial elements which can only be classed among the pathogenic fungi.³

In order to systematize the description, I am accustomed to divide the microbean forms into the following groups, the designations of which have only an arbitrary value:

- (a) Bacilliform elements;
- (b) Yeastcells;
- (c) Oblong forms;
- (d) Hyphæ;
- (e) Indeterminate forms.

(a) *Bacilliform Elements*.—As their name indicates, these are similar to bacilli, but bacilli *sui generis*, of different sizes, from the smallest, which are without definite structure, to the largest, which have the aspect of anycelial filaments, provided with metachromatic granulations, either bright or slightly colored. They are most numerous in preparations made directly from ganglionar juice.

(b) *Yeast-cells*.—These possess a double-bordered membrane, are usually smaller than those of Blastomycosis, multiply by germination, and almost always contain metachromatic granules. Perhaps the name of *conidio-levulæ* would be applicable to some of these cells, according to some mycologists, notably Piney.

(c) *Oblong Forms*.—These are not common, but in rich and well made preparations—which are rare. They can be seen of varying sizes. These corpuscles are notably similar to the so-called forms *en navette* of *sporotrichosis*. Besides a capsule, which may be visible or not, they also present metachromatic granules, and sometimes various phases of division.

(d) *Hyphæ*.—These are still rarer, but they exist in certain lesions. They are found in some smear preparations, but are almost always deformed, because they are torn in consequence of the violent puncture to which the ganglion has been subjected.

(e) *Indeterminate Forms*.—These forms are neither bacilliform elements nor yeast-cells, but a mixture of all of these. At times

they have the appearance of small cocci, at times of diplococci, and again of small bacilli or cocco-bacilli, either grouped or separated; in short, they have no well-defined morphology. However, though they have strange forms, they constitute, in fact, a part of the etiological picture. Besides this, they have other forms, much rarer, which shall be described later.

All these elements, which are proper to the swollen lymphatic ganglia, can also be seen in the circulating blood of the sufferers. Here, however, the investigation is much more difficult, because, in this case, the mycotic forms are much rarer than in the ganglionic juice. In order to carry out the investigation, it is necessary to employ a technic which will be described in a special article.

CULTURES.

It is not always feasible to obtain direct cultures—that is, by sowing ganglionic liquid in suitable media. These are the malted glucosated and saccharated media of Sabouraud.⁴

The inoculations are made with ganglionic liquid obtained by means of a puncture, since the patients object to extirpation of the ganglia.

The cultures are obtained in about 50 per cent of the cases. Sometimes they develop rapidly, more or less in the first twenty-four or forty-eight hours, sometimes after a week or more. They are indifferent to temperature; when cultures are positive, they develop well, whether in the incubator or in the room.

The characters of the cultures are very variable; however, we may consider the following type as one of the most common: At the commencement, whitish or yellowish colonies form (sometimes with both colors), smooth, moist, depressed or not, of slight consistence, with a tendency to flow along the length of the tube, principally when the latter is held in a vertical position, forming finally a pasty mass at the bottom, half liquid, half solid, which recalls the consistence of certain jellies. In this state, the culture can be preserved a long time; this character seems to be definitive, and not transitory. At times it grows, fades and dies before changing this appearance. But when it is transplanted repeatedly in other media, the primitive jelly takes form; it solidifies, and the gas bubbles disappear, though they were frequent at other times; it finally results in a pure, complete culture of a fungus. Then we see rugæ, depressions, prominences and other irregularities on the

surface, which was at first smooth. But these accidents, themselves, are very variable, and undergo new modifications.

Another cultural type is the following: The usual semi-liquid consistence is not observed. The culture may be consistent at the beginning, and then break up into ridges, which happens, as a general rule, to all mycotic cultures.

Finally, both these types may fructify. It is true that this does not always happen, and the culture retains its primitive aspect; but a large number of them fructify when they are old.

Fructification likewise presents diverse modalities. Pleomorphism is not rare, but the following type may be taken as the commonest: When a culture grows old, or the culture medium loses its moisture, or from some unknown circumstance a rough layer forms, of a white or yellowish-white color, passing gradually from one to the other, this layer is like a layer of débris irregularly spread on the surface of the culture, especially in the upper part of the tube, at the point where the agar first dries up.

This type of sporulation forcibly recalls that of certain cultures of Actinomycosis, which cultures of Adenomycosis resemble, even in the matter of pleomorphism.

As before stated, it is impossible to describe now all the modalities of fructification that this fungus may present. I must state, however, that the mode of fructification in corymbs described in the second preliminary note, published in the *Brasil Medico*, does not belong to the morbid agent of adenomycosis. It was a contamination, which becomes grafted on some cultures, giving them that bizarre aspect which, for a time, led me to suppose that it was proper to the fungus in question.

MICROSCOPIC STUDY OF THE CULTURES.

Knowing already the polymorphism which distinguishes the germ when it is encountered in the lesions—that is, in the hypertrophied ganglia—it is easy to conceive that in cultures the same germ should present itself under various forms. These forms are reducible to two types:

First type: When we examine a preparation from a recent culture, that which arrests attention, as a rule, is the presence of numerous bacilliform elements, either with or without metachromatic granules; along with these there may be few or many indeterminate forms (similar to cocci, cocco-bacilli, diplococci, etc.), and, besides these,

though rarely, yeast-cells. These may be entirely wanting, or else so few in number that it is difficult to find them.

To summarize: That which predominates in the microscopic organization of this cultural type (which corresponds more or less to the macroscopic type in gelatin) is the bacilliform element accompanied by the indeterminate forms. This combination misleads an observer who has not been forewarned, and who goes further astray the longer he continues the investigation. In fact, with the flight of time, sometimes at the end of several months, this element develops forms that are clearly filamentous, which are slowly transformed into a mycelium, accompanied by the respective conidia, and yeasts of oblong forms, etc. In fine, it acquires all the macroscopic and microscopic characteristics of a culture of a fungus.

The second type corresponds more or less to the other macroscopic type, which we may call *toriform*, which very soon becomes solid and with the macroscopic appearance of mycotic cultures. In this, the feature which preponderates, from the very beginning of development, is the large number of yeast-cells, which multiply by germination, and frequently appear moniliform. However, in different specimens of these cultures it will not be very difficult to discover some bacilliform elements interlaced with the mycelial filaments.

After a time, which varies with different specimens, all of the cultures can be confounded with one another.

From all of the foregoing, we conclude that long waiting and careful observation are indispensable in order to understand the versatility of such cultures, and the morphological variations which they are capable of presenting in their late development and in their capricious organization.

I have confined myself to the description of these two types, which are the most common, leaving aside the intermediate types and the aberrations, which are not very exceptional.

PATHOGENIC ACTION.

It is well to remember that, in the still obscure chapter of the already known human mycoses, which have been more or less studied, there always exists a part which leaves much to be desired, namely, that of inoculation. It is true that some experiments have been made to try to determine the pathogenic action of the fungi that are the causes of the principal mycoses. But nearly all

the good authors refer to the uncertainty of this experimentation, especially in regard to blastomycosis, actinomycosis, and even sporotrichosis.

However, in certain lucky inoculations, satisfactory results were obtained, as those of Gaspar Vianna in blastomycosis, who produced in the monkey lesions very similar to those observed in man. In spite of this, it appears that the number of negative experiments is greater than the number of positive.

This remark should prepare the reader to expect to encounter the same inconstancy in results in the case of adenomycosis.

In fact, when virulent material is inoculated (ganglionar juice of the patient, or blood, or cultures), we find a notable percentage of conclusive results, which thus proves the etiologic action which is the object of this paper.

Several animals are inoculable: the rat, the guinea-pig, the monkey. But the animal most susceptible to adenomycosis is the *camondongo*, which rarely escapes inoculation, dying of septicemia, and presenting the mycotic forms in the blood and viscera.

The other animals are also accustomed to succumb to the inoculations, principally when these are made intraperitoneally. Also, inoculations at the root of the tail and on the paws do not give bad results. Subcutaneous inoculations, as a rule, are the ones that give the most precarious results.

The duration of the experimental disease is worthy of notice. It is also very variable; mostly it lasts a month, or even longer. But this is not an exclusive quality of this mycosis, for it is common to all, or almost all, of them; at any rate, of those already referred to.

Inoculation in the guinea-pig has a particular significance. It serves to exclude the hypothesis of ganglionar tuberculosis. This is all the more valuable since, when there is concomitant tuberculosis, the guinea-pig does not fail to reveal the reaction and the specific bacillus, at times along with the fungus of adenomycosis, thus resembling experimentally the clinical cases from which the inoculated material was obtained. In these cases, in which the two infections co-exist, sooner or later there occurs suppuration or caseation of the hypertrophied ganglia. In the uncomplicated cases of Hodgkin's disease, the evolution of the experimental infection, not only in the guinea-pig, but in the other susceptible animals, is exempt from suppuration; there is engorgement of the

lymphatic ganglia, almost always moderate, reminding us vaguely of the morbid process which attacks the human lymphatic ganglia.

CLASSIFICATION.

I have not yet sufficient material to enable me to classify the morbid fungus of *Adenomycosis*. For this purpose a prolonged and careful study is necessary, which, in spite of its difficulties, I am striving to carry out. Let us add that the present state of mycology is not absolutely flattering. Any one who consults the best authors will see the confusion that reigns in this department of botany.

We see that it is indispensable to give a name to the present germ; so, I now give it the provisional name of *Adenomyces Cruzei*, thus rendering small but sincere homage to the memory of the unforgettable master which science and the Brazilian Fatherland have just lost.

The case being as above stated, a new genus remains created, whose place perhaps is not far from the *Ascomyces*.

CONCLUSIONS.

First. The causative agent of Hodgkin's disease, pseudo-leukemia, etc., is an extraordinary polymorphous fungus, which is found in the lymphatic ganglia of the patients, is cultivable, and is pathogenic for laboratory animals.

Second. In view of this etiology, the name of *Adenomycosis* may be given to this disease.

Third. Leukemia is also a mycosis.

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Idem, *Nova Molestia Humana (?) (Adenomycosis endemica)*, second preliminary notes *Brazil Medico*, 28th year, page 153.

2. Ezequiel Dias: *Pesquisas etilógicas na leucemia (nota previa)*, *Brazil Medico*, Anno 29, No. 39, page 305.

Idem, *Pesquisas etilógicas na leucemia (second nota previa)*, *Brazil Medico*, Anno 29, No. 42, page 329.

3. It is to be remarked that this investigation is difficult. All depends on a happy puncture, which should reach the regions of the lymphatic ganglions, where the germs are found, and are developing. This does not always occur.

4. The saccharated gelose is prepared as a kind of caramelized cane sugar—the *rapadura*—which is well known in the interior of Brazil. This medium, which I have used for more than three years, supplies perfectly the malted gelose of Sabauraud, which passes as the culture medium *par excellence* for fungi.

BERI-BERI IN BRAZIL.*

By DR. CLEMENTINO FRAGA, Bahia, Brazil.

(Translated for the JOURNAL by Dr. A. McShane, Greenwood, Miss.)

In Brazil, beri-beri was first recognized in Bahia. Silva Lima suspected the existence of the disease when he saw three cases with symptoms similar to the beri-beri from India.

The first observations of this famous Bahian clinician date from 1863, but it was only in 1866 that he published them in a series of articles with the title: "Contribution to the History of a Disease Which Actually Reigns in Brazil, Under the Epidemic Form, and Characterized by Paralysis, Edema and Weakness."

In 1872, Silva Lima collected his articles in one volume, amplifying the text and adding new observations. To this magnificent book he gave the title: "Essay on Beri-beri in Brazil."

It was in 1866 that the city of San Salvador, capital of Bahia, suffered its first epidemic incursion of beri-beri. Silva Lima then classified accurately the clinical forms as *paralytic*, *edematous* and *mixed*, gathering thirty-two observations, with some necropsies.

When the existence of beri-beri in Brazil was once proclaimed it did not take the medical profession long to study the disease in other parts of the country, and soon it was noticed as existing in other States of the North, and in Rio Janeiro.

In 1871, Dr. Sá Pereira observed on the Recife an epidemic in the House of Detention. Costa Alvarenga diagnosed the disease in Rio de Janeiro in 1872. Torres Homem, shortly after, studied the disease in his memorable clinical lectures in the Faculty of Rio, and Lacerda, since 1884, never ceased to study the etiological factor of the disease. Later came other works, in more recent studies, which, in their turn, will receive due mention in these lines.

Let us glance rapidly at the dissemination of beri-beri in the different regions of Brazil.

To begin with Amazonia: Fareira de Lemos refers, in the *Gazeta Medica de Bahia*, to the already established existence of beri-beri in Amazonas in 1867. In Manaos, according to the testimony of Prof. Marci Nery, from 1897 to 1904, 830 fatal cases of beri-beri were registered. This number has been noticeably diminished in these latter years, and, according to Dr. Figueredo

* Read by title before the American Society of Tropical Medicine, New York, June 5, 1917.

Rodriguez, from 1912 to 1915 there were scarcely 173 deaths from beri-beri gathered in the demographo-sanitary statistics of that city. Still, we should not forget the remarks of the observers of that region, that many cases of polyneuritis are ascribed to beri-beri, which, with as much reason, could be ascribed to paludism, alcoholism and plumbism. Lovelace, an American physician who directed the medical work of the Street of Ferro Madeira-Mamoré, says that beri-beri is frequent in the pathology of that region, though this does not appear from his figures, since, out of 30,430 patients from 1908 to 1912, he gives 963 cases of beri-beri and polyneuritis. Allen Walcott, his successor in the same service, considers that the disease does not depend on local insalubrity, but rather on the quality of the food provided.

The recent studies of Carlos Chagas on the epidemiology of Amazonia prove that there is no scientific basis to the current ideas on the frequency of beri-beri in those regions. In fact, Chagas found in the blood of patients, who have been supposed to be suffering from beri-beri, the hematozoön of malaria under a new variety of quartan ague.

Necessarily, the *galloping beri-beri*, which is one of the terrors of the Valley of the Amazon, was shown by the studies of that Brazilian *savant* to be a "myth that did not bear up under the exact epidemiologic analysis of those regions." And then the so-called "galloping beri-beri" is nothing more than a malignant form of malaria, in which the patients rapidly become paralytic, the paralysis extending from the legs to the arms, and rarely reaching the digestive organs and the respiratory apparatus, and ending in death in a short time. The autopsy in such cases always showed the capillaries of the central nervous system were filled with the parasites.

Beri-beri in Amazonas thus remains considerably reduced. Official data must thereby suffer, since well-conducted studies will be the cause of affiliating many supposed cases of beri-beri with the dominant morbid condition of the vast regions of Amazonia—that is, malaria.

In regard to Pará, the same considerations apply. Dr. Americo Campos corroborates this view. He thinks that beri-beri is not frequent in Belem, since, in the interior of the State, cases are enrolled under beri-beri that have only a symptomatic resemblance, but do not justify the diagnosis.

In Maranhao and Pernambuco a few observers, of more distant epochs, allude to epidemics of beri-beri without certain information in regard to the identification of the disease. Dr. Sá Pereira, who admits a fourth form of the disease, *without paralysis or edema*, speaks of an epidemic in the House of Detention. Of late years the extension of beri-beri in the northern States has not been observed, since it appears that it is less frequently diagnosed as its special clinical attributes become better known.

We now come to Bahia, where the disease was first identified, and whence numerous scientific publications have come since the time of Silva Lima.

We have already referred to the studies of Silva Lima. Afterwards, in chronological order, appeared the words of Julio de Moura and Jannario de Farei in 1869; of Almeida Conto and Saravia, *thèses de concours*, 1871; of Ribeiro da Silva and Jeromino Sodr  in 1873; of Pacifico Pereira, under the title, "Studies on the Etiology and Nature of Beri-beri," in 1881; of Pacifico Mendes, "Contribution to the Study of Beriberi," in 1884; de Nina Rodriguez, on "The Differential Diagnosis Between Beri-beri and the Polyneurites," in 1890; of Ezequiel Britto, Ramiro Monterio and Alfredo Britto, in memoirs presented to the Third Brazilian Congress of Medicine, in 1890; of J. Soledade, in 1904, on the hematology of beri-beri, who, after fifteen observations, arrived at the following conclusions: "Blood of normal color, coagulation index between 1'40" and 2'40", density 1064028, hemoglobine 65 per cent, red corpuscles 4937428, leucocytes 8735, neutrophiles below normal, eosinophiles and transition-forms above normal, small lymphocytes sometimes increased, large lymphocytes always in large proportion."

Various theses for the doctorate in medicine were presented to the Faculty of Medicine which reflect the state of knowledge of the disease at the time in which they were written. Among them are those of Drs. C. Rocha, J. A. Mello and Ferreira Velloso in 1877; E. Ribeiro in 1878; Pereira da Silva, Ottora Toscani, J. Ignacio, Bandeira, Morethson, Figuerredo, Amaral, V. Martins, S  Carnero, Cerqueiro Souza, Mello Moraes, Souza Dias, Mello Gomes, F. Reis, A. Pinheiro, in 1879 and 1880; Branlio Pereira in 1881; Faria e Silva, H. Monteiro, L. Gualberto, Perdig o in 1883; A. Texeira, A. Rodrigues, Pinheiro, Montenegro and Duarte Pereira in 1885; Starling in 1890; Santos Neves in 1892; J. Santa Thereza in 1893;

Ignacio da Silva in 1900; João Soledade in 1905; R. Oliveira in 1908, and F. Veiga in 1915.

In 1916 I presented to the National Academy of Medicine a memoir entitled, "Beri-beri or beriberic Syndrome?" in which I defended the nosological anatomy of beri-beri. I gave notice in this work of my first observations, made with the aid of my assistant, Dr. A. Barbosa, for the purpose of provoking the reactions of the vegetative nervous system in beri-beri, by the investigation of the oculo-cardiac reflex and by the tests of adrenalin, pilocarpine and atropine, successively administered by hypodermic injection. Our observations, which now number more than ten, reveal an increased excitability of the sympathetic nervous system.

Again, in 1916, I published a study on "Beri-beri in Bahia," in order to commemorate in a special number, the fiftieth anniversary of the *Gazeta Medica da Bahia*," which I have used in these lines.

At the present time one of my pupils, Medical Student Arlindo Assis, is undertaking, by experimental studies, to determine the alimentary etiology of beri-beri according to the methods of modern authors, such as Eykmann, Takaki, Frazer, Stanton, Suzuki, Odaké, Gryus, Funck, Rénaut, Weil, Moriquaud, Michel, Holst, Frolich, etc., whose works have greatly contributed to elucidate the everlasting question of the etiopathology of beri-beri.

Reviewing the records of the clinical register of Santa Izabel Hospital, the most important establishment of the kind in Bahia, since the time the disease was first discovered there—that is, since 1866—we succeeded in finding a total of 914 cases in fifty years; and in the last ten of those years, from 1906 to 1916, only 193 occurred, which corresponds with the diminution of the number of patients in the city.

In Bahia, the prisons and asylums have suffered principally from epidemics of beri-beri, it having been found several times in the Hospital de Marinha, in the barracks at Palma, in the penitentiary, and in the Asylum of Sao Joao de Deus. This last establishment has been more or less attacked, suffering almost annually from epidemic outbreaks, some of which were very violent. Thus, in 1904, there were 136 lunatics in the asylum, of which only 66 remained in December: almost all of the deaths were from beri-beri. In the last three years, new epidemic outbreaks occurred: there were thirty cases in 1914, fifteen cases in 1915 and twenty-six cases in 1916.

In the State Penitentiary, now extinct, there were, in 1880 and 1881, no less than 432 cases of beri-beri, nearly all of them being sailors disembarked from warships.

Apart from the asylum, beri-beri has not manifested itself in Bahia in an epidemic form. This shows its decrease, and is in accord with the data furnished by demographo-sanitary statistics.

Passing to the South of Brazil, we see that beri-beri is found in Rio de Janeiro; it raged as an epidemic in Minas, and furnished a few cases in S. Paulo.

Dr. Theo. de Almeida, in his work on "Beri-beri in Brazil," states that, until 1885, beri-beri does not figure in the sanitary statistics of the capital of the Republic, adding that "to-day it may be regarded as totally eliminated from the diseases of Rio de Janeiro."

In 1907, Dr. Julio de Novaes observed an epidemic of beri-beri in the "Fifteenth of November School," and Dr. Ed. Meirelles described nine cases in the House of Detention, among about 800 inmates.

In regard to beri-beri on board our ships, the so-called "ship beri-beri," the cases on the corvette Vital de Oliveira, in 1880, and of the cruiser Nictheroy in 1883, were notable for their high mortality. On other vessels of our navy, including the training-ship Benjamin Constant, beri-beri has shown itself, but was not unusually fatal.

There is no doubt that beri-beri appears most frequently on old vessels, in which the accommodations for the crews leave much to be desired in regard to hygiene. It is certain that, in our new vessels, like the S. Paulo and the Minas Geraes, the disease has also been found.

Many works on beri-beri have been written in Rio de Janeiro. We need only mention those of Torres Homen, Martins Costa, Francis de Castro, Lacerda, Almeida Magahaens, Fajardo, Miguel Couto, Austregesilo, Henrique Duque, Aloysio de Castro, Julio de Novaes, Oscar de Souza, Lima Freire, Edouarde Meirelles, Theophilo de Almeida.

In Minas Geraes, beri-beri in epidemic form was observed in the seminaries of Diamantina, Mariana and in the Caraca, which, though attacking a large number of alumni, caused only a few deaths.

There were only a very few cases in the entire State of S. Paulo;

in epidemic form, we know only of the Hospice Juquery, related by Dr. Francisco de Rocha.

There is nothing definite in the medical literature of Brazil concerning the Southern States of the Republic; the less recent outbreaks do not deserve much confidence, since the diagnosis is set down without due regard to the differential diagnosis of polyneuritis.

It is not to be denied that, when beri-beri was first recognized in Brazil, many cases were called beri-beri in many places without making an exact diagnosis.

Later on, there occurred a reaction against such exaggerations, and the figures for beri-beri continued to decrease, *pari passu* as the disease became better known by its clinical phenomena as distinguished from polyneuritis.

However, there is no doubt that beri-beri exists in Brazil. It exists and declares itself by clinical signs, even though its etiology still remains vague and undecided.

CONTRIBUTION TO THE STUDY OF INTESTINAL HELMINTHIASIS IN BAHIA.*

By DR. OCTAVIO TORRES, Bahia.

(Translated for the JOURNAL by Dr. A. McShane, Greenwood, Miss.)

In response to the courteous invitation of Drs. Bailey Ashford and John Swan, President and Secretary of the American Society of Tropical Medicine, to write on some subject related to tropical pathology in Bahia, we decided to collect certain scattered data on intestinal verminoses. This subject is at present largely occupying the attention of the North American physicians, as well as those of Brazil, especially so since they were aroused by the note of alarm sent out by the illustrious Prof. Miguel Pereira.

For a long time we have studied verminoses among us. We wrote an article on this subject that was published in the commemorative jubilee number of the *Gazeta Medica da Bahia*, entitled "Verminose Intestinal Endemica e Latente na Bahia," and, from the studies then made, we reached the conclusion that it is rare to find an individual in our midst who does not harbor intestinal worms. The following percentages were found: 95.45 per cent in (apparently)

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normal individuals; 98 per cent, 99 per cent, or even 100 per cent in individuals who go to the hospital.

We will here reproduce some of the data from the article above referred to; we will then draw up statistics of the examinations of the feces of the patients seen in the medical clinics (first and third chairs of the Faculty of Medicine of Bahia), and, finally, we will draw some conclusions from these statistics.

With these ends in view, we must confess, at the outset, that this is not a complete work which we present, but a simple contribution to the study of intestinal verminoses in Bahia; they are data which, in conjunction with others, will some day, perhaps, complete our modest work.

Ever since we were intern of the first chair of Clinical Medicine of the Faculty of Medicine of this State, which was filled by the illustrious and beloved master, Dr. Anisio Circundes de Carvalho, where we were charged with the duty of examining the feces of every patient who entered the service, and where we made our studies on the subject that constitutes our inaugural thesis ("Contribution to the Study of Ankylostomas in Bahia, 1909"), we have very frequently observed the existence of intestinal worms, even in patients who presented no apparent symptoms of verminosis.

This frequency is found not only in man. In order to fortify our inaugural thesis, we made a small number (twelve) of autopsies on animals, and there was not a single one whose intestines did not contain ascarides, ankylostomias, and, in some cases, tapeworm.

Subsequently, we made this verification on dogs, cats, domestic birds, rats, etc., finding worms in all of them.

On the other hand, we examined the feces of laboratory animals, dogs, cats, besides other animals (horses, etc.), and we found ova of worms in all of them.

The press of other matter forced us to abandon this line of work for a time, until we began to examine the feces of our patients.

We examined the blood from some of our patients drawn at night, and we found filarial embryos in a number of them.

We did not undertake a study of the endemic index of latent filariasis in Bahia, since this subject was exhaustively discussed in the graduation thesis of our esteemed and distinguished colleague, Dr. Almir de Oliveira, Bahia, 1909.

However, according to our own observations, we may say that the personal co-efficient of our investigations is 10 per cent of in-

dividuals apparently healthy, in which filarial embryos were found in the nocturnal blood.

Intestinal worms are much more frequent than filaria, it being rare to find a patient who does not harbor worms in his intestine (See the graduation theses of Pedro Martins, Cezar Piraja, Octavio Torres, 1906, and of Eloy da Silva Jorge, 1915), the percentage usually being 96 or 96.5 per cent.

In February, 1916, we were charged by the very worthy and illustrious Director General of Public Health of Bahia, and professor of general pathology in the Faculty of Medicine, Dr. Goncal Moniz, with the task of examining the feces of the apprentice sailors of our naval school (which examination was requested by the chief of the Naval Sanitary Corps, Admiral Dr. Lopes Rodrigues). The object of the examination was to eliminate ankylostomiasis from the navy. We are compelled to admit that there was not a single sailor whose feces we examined who did not harbor two or three varieties of ova, and, in some cases, four.

In infancy, the frequency of helminthiasis in Bahia is prodigious.

In our patients suffering from diseases of the skin, leishmaniasis, granuloma ulcerosa, mycosis, who were about to undergo operations, we always found ova of intestinal parasites in their feces.

In order to carry out our plan of ascertaining the exact percentage of carriers of intestinal worms, we made a certain number of examinations of the feces of healthy, or apparently healthy, individuals, and of autopsies of normal individuals who had met an accidental or violent death, to which we added many of the examinations of feces made by us in individuals affected with various diseases.

In order to look for worms in the cadavers, we opened the intestines, washed the contents in a bowl, and then strained the liquid through a sieve; this process is preferable to, and more rapid than, that with Boas' filter.

The examination of the feces was always carried on in the following manner: The material having been collected in a special vessel for transport, we took about two cubic millimeters of this, and diluted it with four or five drops of water on a long glass slide, which was covered with another slide.

We made three or four preparations in this manner; the results were always satisfying.

On account of lack of time, we never used the centrifuge on the feces for examination, which sometimes enables us to find ova in some cases where they would otherwise escape observation by our own method.

We never obtained from individuals in whose feces a few ova had been found a remittance of new material in order to ascertain if larger number of ova, or kinds of ova, could be found in other specimens.

The number of observations in females is relatively small, on account of the difficulty in obtaining material for examination. We never examined material more than one day old.

We endeavored to examine the feces of individuals of all social classes (physicians, lawyers, engineers, merchants, laboratory workers, students, etc.), and residing in the most diverse points of the capital.

We present the tables of our observations, setting forth that of healthy individuals (110 observations); then the observations of patients with other diseases (120 of our patients in the medical clinic, and some others suffering from leishmaniasis, granuloma, other skin diseases, etc.), who had intestinal worms; lastly, the table of autopsies performed in the capital of Bahia (City of Salvador).

Of the examinations of the feces made, we make the following table, giving the names of the worms found in each case:

	In persons apparently healthy. No. of Cases.	In patients with other diseases. No. of Cases.
Ankylostoma.	1	2
Ankylostoma and ascarides.	1	7
Ankylostoma, ascarides and trichocephalus.	24	36
Ankylostoma, ascarides, trichocephalus and schistosoma.	2	15
Ankylostoma, ascarides, trichocephalus, schistosoma and oxyuris	0	1
Ankylostoma, ascarides, trichocephalus and soma and oxyuris	0	1
Ankylostoma, ascarides, schistosoma and oxyuris	0	2
Ankylostoma, trichocephalus and schistosoma.	1	6
Ankylostoma, trichocephalus, schistosoma and oxyuris.	0	1
Ankylostoma, trichocephalus and oxyuris.	0	1
Ankylostoma and trichocephalus.	9	22
Ankylostoma and schistosoma.	0	3
Ascarides.	10	2
Ascarides and trichocephalus.	30	5

Ascarides, trichocephalus and schistosoma	1	1
Ascarides, trichocephalus and oxyuris	1	2
Ascarides and oxyuris.	1	1
Trichocephalus.	18	3
Trichocephalus and oxyuris.	0	1
Trichocephalus and schistosoma.	2	0
Trichocephalus and tenia saginata	1	0
Schistosoma.	1	3
Oxyuris.	1	0
Tænia saginata.	1	0
Patients free from worms.	5	0
	<hr/>	<hr/>
Total number of examinations.	110	120

In the autopsies performed, we found the following associations:

Ankylostoma and ascarides.	6
Ankylostoma, ascarides and trichocephalus.	10
Ankylostoma, ascarides, trichocephalus and oxyuris.	3
Ankylostoma, ascarides, trichocephalus and schistosoma	3
Ankylostoma and trichocephalus.	1
Ankylostoma, trichocephalus and oxyuris.	1
Ascarides and trichocephalus	6
	<hr/>
Total number of autopsies.	30

In 110 persons examined we found:

Ankylostoma in.	38	Ankylostoma.	102
Ascarides in.	70	Ascarides	78
Trichocephalus in	89	Trichocephalus.	98
Schistosoma in.	7	Schistosoma.	32
Oxyuris in.	3	Oxyuris.	13
Tænia saginata in.	2		

And five negative bases.

In thirty autopsies accidentally killed we found:

Ankylostoma in.	24
Ascarides in.	28
Trichocephalus in.	24
Schistosoma in.	3
Oxyuris vermicularis in	4

Altogether, 230 individuals were examined. Of these, 110 did not seem abnormal in any way, and 120 were sick with various diseases, without apparent symptoms of worms; and 30 autopsies were made in cases of violent death.

From these observations we may infer that the number of persons infested is enormous.

There is agreement between the data furnished by the examina-

tions made of persons supposed to be normal, and those dead by external violence; there is slight deviation in the number of carriers of trichocephalus, which was 89 in 110 cases in healthy individuals, and twenty-four times in thirty autopsies.

The number of these hosts of ankylostoma was greater among those examined at the autopsy than among (apparently) healthy living subjects, perhaps because, among the latter, the larger number were individuals belonging to the better social classes.

Of the 110 persons, 82 were males and 28 females.

Under five years of age, six were males, and three females.

Among the female subjects, 11 did house-work, and 5 were cooks or other servants.

Of the 82 males, there were: 3 physicians, 7 lawyers, 1 engineer, 11 students, 8 merchants and clerks, 28 naval apprentices, 2 public employes, 4 in other professions; the remainder are individuals under fifteen years of age.

Of the 120 suffering from other diseases, there were 15 females and 105 males.

The females were: 10 servants, 2 day-laborers, 2 laundresses, and 1 field-hand.

The males were: 37 laborers, 18 other trades (carpenters, shoemakers, tailors, etc.), 14 longshoremen, 4 gardeners, etc., potters; 5 stone-cutters, 3 day-laborers, 2 bakers, 1 merchant, 9 clerks; other occupations, 5.

It is to be observed that in this group of individuals suffering from various diseases there were very few who did not present ova of ankylostoma in the feces, from 85 to 90 per cent, or 101 infested out of 120 patients.

Among the autopsies, 21 were males and 9 females.

By occupation: 2 students, 1 dressmaker, 5 servants and laundresses, 6 coachmen, longshoremen and stevedores, 2 servants, 1 sailor, 1 chauffeur, 1 carpenter, 1 day-laborer, 1 profession unknown. The remainder were under 15 years of age.

Of the 230 individuals examined, we found a single variety of worms in 42, thus distributed:

	Healthy individuals.	Sick with other diseases.
Ankylostoma alone.	1	only 2
Ascarides alone.	10	only 2
Trichocephalus alone.	18	only 3
Schistosoma alone.	1	only 3
Oxyuris vermicularis alone.	1	0
Tænia saginata alone.	1	0

In the thirty autopsies, the parasitism was always of more than one variety.

We realize that the number of our observations is too small to justify us in drawing very definite conclusions.

We gathered the worms only at the autopsies, and from these we arrive at the following conclusions: Of the two species of ankylostoma, the type that predominates is the ankylostoma of Stiles (*Necator americanus*). We affirm with satisfaction the conclusions at which we arrived in the study made to elaborate our graduation thesis on the relative frequency in Bahia of the two species of ankylostoma of Stiles and of Dubini.

We found the ankylostoma of Dubini only twice, and the two species together only once.

The ascarides were usually eight or ten in number, and only at the autopsy of a little girl (accidentally poisoned by mandioca) we found more than 100 ascarides. This case would not have been likely to figure in our first table, because she would naturally have presented some symptoms of verminosis during life.

In some cases, as in autopsy No. 20, the ascarides reached a large size; thus, some female worms measured 40 or 41 centimeters in length, and some males 24 or 25 centimeters.

We found the ascarides in all portions of the intestinal canal, from the duodenum to the anus, but most frequently, however, in the jejunum and the ileum.

In regard to having found ascarides in other parts of the digestive tube, this seems to be unimportant, because we know of the migration of these worms, from its normal habitat when the cadaver begins to cool.

We did not have time to examine the trichocephali found, merely making note of the adherence of these worms to the human intestines. They were so deeply buried in the mucosa of the large intestine that it was impossible to withdraw them, even at autopsies made many hours after death.

We always found the trichocephalus in the large intestine, in the greatest number in the cecum and the ascending colon, growing scarcer as distance from these increased.

We found the oxyuris scanty, and in few cases (four) localized in the rectum or immediate neighborhood.

We found Manson's schistosoma at first in a few cases and in very small numbers; this was, perhaps, due to the rapidity with

which we had to do our work, and to the fact that we did not make a critical search for it in all of our autopsies.

However, this year we found in 25 autopsies the schistosoma in 18 cadavers; sometimes 20 or 25 worms were obtained, some in pairs, some singly, not only in the portal vein, but also in its branches.

This shows that its frequency among us is much greater than we suppose.

Who knows if that be not the cause of many cases of cirrhosis of the liver in our midst?

We sent a large number of our schistosomes to the learned Prof. Adolpho Lutz, who, after his brilliant discovery of the evolutionary cycle of the worm, is now completing his work.

We proceed in the following manner to withdraw the worms: We ligate the superior and inferior venæ-cavæ and the portal vein, then cut the veins beyond the ligatures, and remove the liver from the abdominal cavity.

We open the portal vein and take out the schistosomes found in the blood or coagula; then we search in the branches of the hepatic veins.

When the worms are caught in coagula, we leave them in contact with the soda at 36°, slightly diluted and then they are easily removed.

The tænia that we obtained for study were eliminated by means of vermifuges. The two that figure in our statistics were of *tænia siginata*. Up to the present time there is no record of *tænia solium* in Bahia which originated in that place.

We wish here to express our gratitude to Dr. Oscar Freire, the illustrious professor of legal medicine in the Faculty of Medicine in Bahia, who facilitated our work on the cadavers which fell within the province of that institute.

The majority of the authors say that the smallness of the number of worms has no influence on the general health of the host. This ought to be, indeed; but we think that the intestinal worms, even in small numbers, can produce the most diverse modifications. Thus, we find eosinophilia in the blood of apparently healthy individuals who are carriers of the worms; this clearly proves that their toxins are affecting the organism, which reacts to that form of parasite.

We cannot believe in the innocuousness of the ascardies, tricho-

cephali, etc., principally the latter, which penetrate the intestinal mucosa, causing very small wounds, which are so many portals of entry for infection.

We have never seen a case of verminosis due to trichocephali alone in which there were anemia and other symptoms. Among us, the association of parasites is the rule, and it is not rare to find an individual whose intestines shelter three or four varieties.

We will here cite a case that we deem very instructive and interesting, and, if it had not been for the microscopic examination of the feces and the elimination of the parasites, the patient would have died:

C. J., native of Maranhao, physician, suffering for a long time from gastro-intestinal disturbances, which caused a progressive loss of weight, since he fell from 73 kilograms to 57.

He consulted all the local doctors, and each one made an exquisite diagnosis. Growing more emaciated, he decided to come to Bahia, where he was examined by most of our physicians, but with no better luck than before. Some requested an examination of the feces, but only for the purpose of learning the action of the intestinal juice on the food. The diagnoses varied among enteritis, gastro-enteritis, entero-gastro-colitis, muco-membranous enteritis, chronic typhlitis, neurasthenia, etc.

He remained free from beriberi, and he went back to Maranhao in the same condition as when he arrived. He continued to suffer from the same disturbances, intestinal pains not well localized, nausea and, sometimes, vomiting; diarrhea, bad digestion of all foods. He did not derive the slightest benefit from medication.

A short time after he returned to Maranhao he passed some ascarides, and he took some vermifuge and passed an uncountable number of ascarides. He again took the vermifuge, and he soon regained his original weight.

We might relate many other observations besides this one, in which a simple examination of the feces would clear up all doubts, and make the diagnosis clear.

Dr. R. Gonzalez, of Caracas, Venezuela, in his recent work on "The Differential Diagnosis Between Appendicitis and Bilharziosis," cites several erroneous diagnoses due to a lack of examination of the feces; and he shows that errors of diagnosis of the appendicular form of intestinal parasitism are common also in the capital of Venezuela; and, in this connection, he cites five cases that presented the symptomatology of appendicitis.

In one of these cases an eminent surgeon of that capital performed a laparotomy for the purpose of removing the appendix, and when he found the appendix perfectly healthy he decided to remove the right ovary, which was condemned by default as being responsible for the pains from which the patient suffered.

In another case three internists and two surgeons diagnosed appendicitis, and an operation was fixed for the next day. In the evening, however, the diagnosis of intestinal parasitism, made by another physician, stopped the operation, and it is now seven years since that appendix has been awaiting the execution of that operative sentence.

In two other cases surgical intervention was decided on, as in the others, but an opportune coprological examination commuted the sentence to evacuation of the worms that simulated appendicitis. These four cases were observed by the author quoted, in Caracas, and a fifth was mentioned in the treatise on *Maladies parasitaires* of Grall and Charac. In all of these cases the disease ended favorably.

Of the tables already given, we add that of the examinations of the feces of individuals gathered in the infirmaries of the second and third chairs of Clinical Medicine of the Faculty of Medicine of Bahia.

Examination of the feces of individuals above referred to:

Ankylostoma alone.	116 cases
Ankylostoma and ascarides.	113 "
Ankylostoma, ascarides and trichocephali.	221 "
Ankylostoma, ascarides and trichocephali and schistosoma.	79 "
Ankylostoma, ascarides and trichocephali and schistosoma and oxyuris.	5 "
Ankylostoma, ascarides, trichocephali and oxyuris.	21 "
Ankylostoma, ascarides and schistosoma.	27 "
Ankylostoma, ascarides, schistosoma and oxyuris.	1 "
Ankylostoma, ascarides and oxyuris.	27 "
Ankylostoma, trichocephalus, schistosoma and oxyuris.	5 "
Ankylostoma, trichocephalus and oxyuris.	12 "
Ankylostoma and trichocephali.	138 "
Ankylostoma and schistosoma.	17 "
Ankylostoma, schistosoma and oxyuris.	2 "
Ankylostoma and oxyuris.	3 "
Ascarides alone.	84 "
Ascarides and trichocephali.	101 "
Ascarides, trichocephali and schistosoma.	14 "
Ascarides, trichocephalus, schistosoma and oxyuris.	7 "
Ascarides and schistosoma.	9 "
Ascarides and oxyuris.	9 "
Trichocephalus alone.	73 "
Trichocephalus and oxyuris.	5 "
Trichocephalus and schistosoma.	5 "
Trichocephalus, schistosoma and oxyuris.	1 "
Trichocephalus alone.	73 "
Oxyuris alone.	7 "
Anguillula.	107 "
Negative examinations.	57 "
Number of examinations.	1,213

From a general review of the above, we conclude that, in 1,213 examinations, ankylostoma was found 795 times; ascarides, 700; trichocephalus, 714; schistosoma of Manson, 209; oxyuris, 86; anguillula, 107; with 57 negative examinations. From these data, we may judge how common intestinal worms are among us.

Of the individuals examined, the greater part were field-hands and day-laborers; the rest were engaged in the most varied occupations, and of these, at least two-thirds came from the interior of the State.

These people go barefoot, drink water that is more or less contaminated, bathe in lakes and rivers, and defecate on ground close to their dwellings.

Even here we may confirm the protective rôle of shoes, and appreciate that the individuals who are accustomed to wearing shoes (people of the better class) are the only ones spared from the invasion of ankylostoma.

In regard to the schistosoma, it seems to be incontestably proved by Prof. Dr. Adolpho Lutz that the infestation takes place when the individual bathes in contaminated lakes, or when they drink the water from these lakes (*vide Brazil Medico*, December, 1916, and February, 1917).

We have already seen how, in our city, healthy persons, or persons adjudged healthy, are infested with worms.

In the last table given above, 57 examinations appear as negative.

We believe that this number should be reduced, and for the following reason: In the clinics some examinations of feces are made by new students, trying for the position of intern, and who would be likely to overlook ova in the feces in a rapid examination.

We think that the same fact explains the great number of persons harboring anguillulas. We are sure that in the great number of examinations made by us the percentage of anguillula was very low—almost *nil*, in fact. It is most likely that the larvæ of ankylostoma were mistaken for the anguillula in the examinations of the feces, since the average room temperature among us, 26° or 28° C., is favorable to the development.

Furthermore, we know how difficult it is to make a differential diagnosis between the larvæ of ankylostoma and anguillulas.

We made the following experiment in feces in which anguillulæ were said to exist; we proceeded to examine the feces immediately

after evacuation, and we found only eggs of ankylostoma, with a large number of blastomeros, and with larvæ already well developed, scarcely hoping to find them hatch out; but this actually occurred many times during the examination.

In the table, not a single examination appears of elimination of proglottides or ova in the feces.

We attribute the rarity of tapeworms among individuals from the interior to the fact that they cook their beef and pork thoroughly before eating them.

Oxyures are found in small proportion, because they are eliminated with the first portions of the feces, and the ova hatch out almost immediately after expulsion, being found only when the feces are examined immediately after defecation, which does not always happen.

From the frequent observations of the verminoses among us, we long ago began to employ anthelmintics systematically on every patient admitted to the hospital, giving thymol according to the formula recommended by Dr. Adolpho Lutz, and employed for the first time in Bahia by Goncal Moniz, the eminent professor of the Faculty of Medicine, followed by Alfredo Britto and many others.

Actually in our dermatological service in the Hospital of Santa Isabel we give our patient 0.75 gram [12 grains] of betanaphthol every morning for twenty or thirty days, and then examine the feces to verify the existence of worms.

We went further than that and taught those poor patients various methods of preventing reinfestation.

The illustrious Prof. Pedro Severiano de Magalhães, in a letter published in the columns of the *Jornal do Commercio*, of Rio de Janeiro, December 17, 1916, and a correction made on January 12, 1917, with the title of "As Chagas de uma Chaga Nacional," reminds us that "a matter worthy of careful investigation is the influence of intestinal obstruction on surgical injuries on the result of operative intervention."

In 1914 and 1915, in several patients gathered for a long time in the surgical infirmary, under the care of our illustrious colleague, Dr. Fernando Luz, suffering from large ulcers of the legs and feet, and very anemic, we had occasion to verify the presence of ova of worms in the feces (ova of ankylostoma, ascaris, trichocephalus and some schistosoma), and to estimate the hemoglobine in all these patients (the very low proportion of 50 per cent, and

sometimes less). We could understand why all these cicatrized rapidly after the expulsion of the worms above referred to.

OBSERVATIONS.

V. J. S., 30 years, mestizo, unmarried, native of Bahia, porter, living in Retiron. He entered the infirmary on December 26, 1914. Diagnosis: Chronic ulcer of both legs.

His feet had ova of ankylostoma, trichocephalus, ascarides and schistosoma. The ulcers rapidly healed after the elimination of the worms with thymol, and appropriate local treatment of the sores.

J. B. S., 21 years, dark, unmarried, native of Bahia, day-laborer, resident of Graca. He entered the hospital on November 18, 1914. Disease: Ulcer of the left leg, and crushing of the right foot, with destruction of the soft tissues of the heel. His feces contained ova of ankylostoma and ascaris. Thymol was given on April 4, 1915. He left the hospital on April 20, 1915, cured.

B. P. M., 25 years, mestizo, unmarried, native of Bahia, shoemaker, resident of Boa Vista; entered the hospital on April 19, 1915. Diagnosis: Ulcers of the leg, and malaria. Feces contained ova of ankylostoma, ascaris and trichocephalus. Treatment with thymol, and local applications to ulcers.

We could quote many similar cases. We recall perfectly one patient, who was under the care of Dr. Fernando Luz, and who was shot in one of his legs. He was brought to the hospital in a precarious state, having 45 per cent of hemoglobine, and, in his feces, ova of ankylostoma in abundance, trichocephalus, and ascaris. The surgeon had to operate without delay, because gangrene of the leg threatened. There was no suppuration after the operation; the wound healed slowly, and a short time after healing the patient had such severe diarrhea he became cachectic and died.

The autopsy verified the presence of a colossal number of ankylostomas, ascarides and trichocephali, which caused death. "Cicatization is ordinarily delayed on account of the general condition of the patient." (Page 76, O. Torres: "Contribution to the Study of Ankylostomiasis in Bahia," 1909.)

For this reason my illustrious colleague, Dr. Fernando Lutz, always employs thymol in all of his cases before subjecting them to an operation, except when immediate intervention is necessary.

Ankylostomiasis and other verminoses here, as elsewhere, assumes the character of a social malady.

Let us repeat what we wrote in our graduation thesis: Prophylaxis can only be done by means of public conferences, placards,

education of the people through brochures, the introduction of a system of drainage and sewerage, etc.

In the Section of Biology of the First Paulista Medical Congress, of which we were elected president, held in December, 1916, in the Capital of S. Paulo, we called attention to the advantages of publishing a little book on the prophylaxis of verminoses, and the practical hygiene, which might be taught in the lower schools.

We know that the prophylaxis of intestinal verminoses is to-day done by means of systematic and obligatory treatment, and we think that this therapeutic prophylaxis gives very practical results, when it causes evacuation of the parasites without prescribing a special regimen, nor interfering with the medicine given. (In this case, betanaphthol.)

The worthy Rockefeller Foundation has undertaken the prophylaxis of the verminoses in America by giving pecuniary, scientific and practical aid to the hygienic service, thus breaking away from routine. The State of Rio de Janeiro accepted the offer of the Rockefeller Foundation, and already the work is progressing under the wise direction of Prof. Lewis Wendell Hackett. We are confident that other States will follow Rio de Janeiro in accepting the offer of the Rockefeller Foundation.

It is a pity that the results of the measures employed are not immediate, and only after the lapse of a few years will be able to appreciate this work in the diminished mortality and increased birth rate.

CONCLUSIONS.

1. The verminoses produced by intestinal worms (ankylostoma, ascarides, trichocephalus, schistosoma) are very common in Bahia.
 2. Ninety-six per cent of apparently healthy individuals in our midst shelter intestinal worms.
 3. One hundred per cent of the inhabitants of the interior harbor intestinal worms.
 4. The statistics drawn up by us clearly establish the above conclusions.
 5. Radical measures should be taken to prevent the spread of verminoses.
-

NEWS AND COMMENT

LOUISIANA NURSES BOARD OF EXAMINERS.—The semi-annual examination of the Louisiana Nurses Board of Examiners was held in Shreveport and in New Orleans, early in December, with over thirty successful applicants.

SOCIETY MEETING.—At the last meeting of the East Baton Rouge Parish Medical Society held Dec. 12, the following officers were elected to serve during 1918: President, Dr. R. P. Jones; Vice-President, Dr. J. F. Stockwell; Secretary-Treasurer, Dr. C. A. Weiss; Delegates, Drs. W. S. Cushman and J. A. Caruthers; Alternates, Drs. E. O. Powers and C. A. Weiss.

JOURNAL'S TWENTY-FIFTH ANNIVERSARY.—January, 1918, will be the twenty-fifth anniversary of the *American Journal of Clinical Medicine*. Thirty-five thousand copies of this journal will be issued and will contain articles by well-known men showing the progress of the past quarter century in all branches of medicine and surgery.

INCREASED HOSPITAL RATES.—Because of the high cost of food, medicine, gauze and fuel, the hospitals in Baltimore have asked the city to pay \$1.75 a patient a day instead of the existing rate of 62 1-2c. a patient a day.

DRAFT PHYSICIAN PUNISHED.—On October 3, Dr. Henry Seligman, Brooklyn, is said to have been convicted of a conspiracy to cause the evasion of the selective draft law, and to have been sentenced to two years' imprisonment in the United States Penitentiary, Atlanta, and to pay a fine of \$3,000.

FIRST ATROPIN MANUFACTURED.—The first atropin manufactured in the United States was placed on the market by Eli Lilly and Company in 1915. This firm found it practicable to obtain atropin from stramonium, and purchased, in 1916, 1,600,000 pounds of this herb.

SOLDIERS BUY SUBSTITUTES FOR ALCOHOL.—According to report, soldiers in military camps in "bone dry" States buy such alcohol substitutes as aromatic spirits of ammonia, paregoric, bay rum, bitters, tonics, cooking fruit extracts, etc. A crusade is on against

this abuse and that of proprietary remedies having high alcohol proportions.

ANTISPITTING LAW ENFORCED.—The Health Board of New York City has ordered police departments to enforce the antispitting law and to arrest all who spit in public places. The police magistrates are asked to act with determination in imposing suitable sentences.

MODEL SECTION HOSPITAL.—Dr. Henry Fairfield Osborn, president of the American Museum of Natural History, in co-operation with H. F. Beers, superintendent of the construction of the Museum, have on exhibit at the American Museum of Natural History, New York, a model of a "Liberty" field hospital, built in sections, and suitable for use in the army, and in Red Cross and general hospital work. It is constructed in five-foot units, so that it can be taken apart and reconstructed by unskilled labor, and so space can be saved in transporting it. The average hospital of this kind is from 150 to 160 feet in length and 24 feet wide.

INSANE WOMEN DOING WAR WORK.—According to report, many women in State Hospitals for the Insane, whom heretofore it has been difficult to keep employed, are said to be now engaged in knitting and making bandages.

THE SOUTHERN GASTRO-ENTEROLOGICAL ASSOCIATION, which met in Memphis on November 12, re-elected the following officers: president, Dr. J. G. Johnson, of Atlanta, Ga.; vice-president, Dr. J. T. Rogers, Savannah, Ga.; secretary treasurer, Dr. M. H. Smith, Jacksonville, Fla.

SUGAR IN MEDICINE.—The Sugar Commission of the New York Pharmaceutical Conference recently distributed about 40,000 pounds of sugar to 2,400 pharmacists of Greater New York, exclusively for medicinal and pharmaceutical purposes. In the United States Pharmacopeia there are 39 preparations and in the National Formulary there are 179 preparations which contain sugar.

PRIZE OFFERS.—The American Academy of Medicine announces two prize offers. For 1918, it offers \$100 for the best essay on "The Principles Governing the Physician's Compensation in the Various Forms of Social Influence," and for 1921, the sum of \$250 on the subject of "What Effect has Child Labor on the

Growth of the Body?" For further information address Dr. W. T. Grayson, secretary, 1101 Westinghouse Bldg., Pittsburgh, Pa.

COLLEGES COMBINE.—The Bennett Medical College and the Chicago College of Medicine and Surgery are now combined to form the medical department of Loyola University of Chicago. The officials of Loyola University recently purchased the buildings and equipment of the Chicago College.

ALVARENGA PRIZE.—The award for 1917 of the Alvarenga Prize has been made to Dr. Wilbur C. Davison, Baltimore, for his essay on "The Superiority of Inoculations with Mixed Triple Vaccine (B. typhosus, B. paratyphosus A. and B. paratyphosus G.). Over Successive Inoculations with the Single Vaccine as Shown by Agglutinin Curves in Men and Rabbits." The next award of \$250 will be made in July, 1918. Essays in competition must be type-written in English, identified by a motto with sealed name and address, and submitted to the College of Physicians of Philadelphia before May 1.

DEATHS FROM PNEUMONIA.—The Metropolitan Life Insurance Company report 38,000 deaths among industrial policy holders in the last six years. It is claimed that lobar pneumonia causes more deaths than any other infectious disease and that it should be quarantined against.

CHAMBERLAIN BILL FOR UNIVERSAL MILITARY TRAINING.—The Clinical Congress of Surgeons and State Committees of the Medical Section, Council of National Defense, at meetings in Chicago the latter part of October, adopted resolutions favoring the Chamberlain Bill, which proposes to require at least six months of intensive military training of all young men in their nineteenth year, to become operative as soon as the army cantonments are available, also recommending physical training in schools.

MEETING OF ROENTGENOLOGISTS.—The fourth annual midwinter meeting of roentgenologists will be held at Hotel Traymore, Atlantic City, Friday evening and Saturday, January 4 and 5, 1918, to which all physicians interested are invited.

TO RECORD TUBERCULOUS DEATHS.—The Bureau of Census, Federal Department of Commerce, is asking the co-operation of

every physician in the United States in an effort to prepare and publish a monograph of the mortality from Tuberculosis, and the occupations of the decedents as well, covering the year 1918. The State departments have promised whatever aid lies in their power to give.

SHREVEPORT MEDICAL SOCIETY ELECTS OFFICERS.—At the annual meeting of the Shreveport Medical Society last month, the following officers were elected for the ensuing year: president, Dr. J. E. Knighton; first vice-president, Dr. A. A. Herold; second vice-president, Dr. J. G. Yearwood; secretary, Dr. W. P. Butler; treasurer, Dr. W. B. Hunter.

MORTALITY STATISTICS.—The Metropolitan Life Insurance Company invites physicians, public health and social workers to make use of its collection of mortality statistics, which present the principal causes of death among white and colored wage earners in the United States and Canada. The material covers over ten million individuals for each of the six years, 1911 to 1916. Death rates are available for each race, by sex and by age period. All inquiries should be addressed to Statistical Bureau, Metropolitan Life Insurance Company, One Madison Ave., New York City.

MEDICAL ADVISORY BOARDS.—Since conditions have arisen where the district examining boards have not been able to settle disputed questions, "medical advisory boards," as proposed by the trustees of the American Medical Association, have been instituted to solve the problem. Well-equipped laboratories throughout the States are to be established, manned by men of well known professional ability in all the specialities, to act as centers for the examination of conscripts where there is a dispute as to their capacity to serve in the Army and Navy. Careful physical examination and laboratory findings will be recorded and the results of this work will be reported to the District Examining Boards.

THE AMERICAN REVIEW OF TUBERCULOSIS.—This journal, which is the official organ of the National Association for the Study and Prevention of Tuberculosis, has made a distinct place for itself in the few months of its existence. The Association, in publishing it, has two distinct aims: first, to provide a clearing house for those who are doing original research work, and secondly, to give the general practitioner in compact form the information

concerning tuberculosis. Physicians are recommended to subscribe to this journal, whose office is at 105 East 22nd St., New York City.

PERSONALS.—Surgeon General, W. C. Gorgas, passed through New Orleans during the past month en route to Camps Beauregard, Pike and Fort Bowie, (Houston, Texas,) on an inspection tour of those places. Major Isadore Dyer, M. R. C., and Dr. Oscar Dowling (New Orleans) accompanied General Gorgas.

Capt. C. Jeff. Miller, M. R. C., formerly chairman of the District Exemption Board at New Orleans, has been appointed by the War Department as medical advisor to Governor Pleasant.

Major Roy M. Van Wart, M. R. C., (New Orleans) who was formerly stationed at Fort Oglethorpe, Ga., has been transferred to Camp Sheridan, Montgomery, Ala.

Dr. W. M. Johnson (New Orleans) attended the meeting of the Southern Medical Association in Memphis.

REMOVALS: Dr. W. M. Johnson, from 1130 to 1121 Maison Blanche Bldg.; Dr. W. D. Wheless, from Mangham, to Rayville, La.; Dr. J. H. Petty, from Endee, New Mexico, to Dalhart, Texas.

BOOK REVIEWS AND NOTICES

Handbook of Anatomy, Being a Compend of Anatomy. By James K. Young. Revised edition. F. A. Davis Company, Philadelphia, 1917.

With the reading of the title of this book arises the question of the advisability of allowing medical students to have in their possession a laboratory manual of anatomy, or especially a "compend" of any sort. Experience of all teachers striving for thoroughness has shown that the student is prone to neglect his text-book of gross anatomy and use his manual instead, and that, as a result, he tries to memorize his anatomy instead of knowing it. A large number of professors of anatomy in the better schools advise against the use of manuals, and some forbid their use.

In the second place, with the excellent manuals of Cunningham, Parsons and Wright, Treves, Barker, Buchanan and Radasch, and those of Heisler, Patterson, Rockwell, Pederson, Potter, Metheny and others already available, the reviewer of this one by Dr. Young has difficulty in finding any excuse for its existence, except for the gratification it may afford the author. The arrangement of material and context are certainly no better than is to be found in other manuals of its kind, and the majority of the cuts are extremely crude. Some of the best in the book are reproduced without giving credit to their source.

Among the best features in the book are a number of diagrams of the vascular and nerve plexuses. Those of the arteries of the head and neck and the extremities, and those of the cephalic, cervical, brachial and

lumbar and sacral nerve plexuses, and the diagram of the sympathetic (Fig. 124, which is after Flower) have considerable teaching value. Some diagrams of the nerve tract of the spinal cord and brain (original) impart incorrect ideas as to the form of the neurones taking part in the neurone chains, and in these, and in the text, erroneous ideas of the origin of nerve tracts are imparted. For example, the student is told that the olfactory nerve arises from the olfactory bulb.

IRVING HARDESTY.

Diagnostic Symptoms in Nervous Diseases, by Edward Livingston Hunt, M. D. Second edition. W. B. Saunders Company, Philadelphia, 1917.

This book of 280 pages and 65 illustrations answers the demand for a book presenting the salient points and leading diagnostic symptoms of the principal nervous diseases. In it the reader will find the essentials in neurological diagnosis, without the laborious work involved in consulting the larger text-books.

The opening chapter is devoted to the examination of a nervous case. An outline used at Columbia University is here given. The rest of the work, divided into sixteen chapters, presents the subject-matter, which is treated from a clinical point of view, in a most clear, comprehensive and masterly way.

Each chapter presents the definition, essential characteristics, classification and explanation (anatomical and pathological) of a prominent symptom or group of symptoms, also a list of diseases wherein the symptom under discussion forms a part, and the other accompanying symptoms in such diseases.

Then follows the diagnosis, prognosis and treatment of such cases.

To single out any one chapter would be unfair to the others equally good. However, the reviewer cannot resist saying that those on paralysis, tremors, reflexes, vertigo, the eye, cerebrospinal fluid and spinal localization should prove of special value.

The illustrations are almost all original and to the point.

This book will prove of great value as a guide and reference book for the general practitioner as well as the neurologist.

CAZENAVETTE.

The Medical Record Visiting List. Wm. Wood & Co., New York, 1918.

In addition to the blank pages for recording visits and accounts, it presents the usual tables, revised and modernized. It is one of the best lists published.

The Physician's Visiting List. P. Blakiston's Son & Co., Philadelphia, 1918.

Published in three styles, this list appears for the sixty-seventh year. It includes the usual tables and is in every way presentable and desirable.

PUBLICATIONS RECEIVED

C. V. MOSBY COMPANY, St. Louis, Mo.

An Intermediate Textbook of Physiological Chemistry, by C. J. V. Pettibone, Ph. D.

Surgery and Diseases of the Mouth and Jaws, by Vilray Papin Blair, A. M., M. D., F. A. C. S. Third edition. Revised so as to incorporate the latest data concerning gunshot injuries of the face and jaws.

Talks of Obstetrics, by Rae Thornton La Vake, M. D.

Physical Diagnosis, by W. D. Rose, M. D.

THE MACMILAN COMPANY, New York, 1917.

The Principles of Mental Hygiene, by William A. White, M. D. With an introduction by Smith Ely Jelliffe, M. D., Ph. D.

The Clinical Pathology of the Blood of Domesticated Animals, by Samuel Howard Burnett, A. B., M. S., D. V. M. Second edition, revised and enlarged.

G. P. PUTNAM'S SONS, New York and London, 1917.

A Practical Dietary Computer, by Amy Elizabeth Pope.

PAUL B. HOEBER, New York, 1917.

The Treatment of Infected Wounds, by A. Carrel and G. Dehelly. Translation by Herbert Child, with introduction by Sir Anthony A. Bowlby.

W. B. SAUNDERS COMPANY, Philadelphia and London, 1917.

The Surgical Clinics of Chicago. October, 1917. Vol. 1, No. 5.

Manual of Anatomy, by Henry Erdmann Radasch, M. Sc., M. D.

An Introduction to the History of Medicine, by Fielding H. Garrison, A. B., M. D. Second edition, revised and enlarged.

W. M. LEONARD, Boston, 1917.

Neurosyphilis, by E. Southard, M. D., Sc. D., and H. C. Solomon, M. D., with an introduction by James Jackson Putnam, M. D.

WM. WOOD & CO., New York, 1917.

The Medical Record Visiting List, or Physician's Diary, for 1918. Revised.

P. BLAKISTON'S SON & CO., Philadelphia, 1917.

The Physician's Visiting List for 1918.

WASHINGTON GOVERNMENT PRINTING OFFICE, Washington, D. C., 1917.

Public Health Reports. Vol. 32, Nos. 45, 46 and 47.

Report of the Health Department of the Panama Canal. September, 1917.

MISCELLANEOUS.

Impotence, Sterility and Sex Gland Implantation, by G. Frank Lydston, M. D., D. C. L. (The Riverton Press, Chicago, 1917.)

Food Value of the Banana. (United Fruit Company, Boston, Mass., 1917.)

REPRINTS.

Een paar nieuw ontdekte darmparasieten; Trichomonascysten, door S. L. Brug.

Apuntes Preliminares, por el Doctor R. Pacheco Luna.

A Few Remarks on Imbecility, and a Suggestion Aimed at Prevention, by H. L. Fougerousse.

Farming and Gardening as a Diversional Occupation for the Insane, by John N. Thomas, M. D.

Ligation or Excision of the Pelvic Veins in the Treatment of Puerperal Pyemia, by C. Jeff. Miller, M. D., F. A. C. S.

Notes on Tropical Diseases Met With in the Balcanic and Adriatic Zones, by Lieut.-Col. Aldo Castellani, M. D., M. R. C. P., R. I. N. M. S.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for November, 1917.

CAUSE.	White.	Colored.	Total.
Typhoid Fever			
Intermittent Fever (Malarial Cachexia)	1		1
Smallpox			
Measles			
Scarlet Fever	1		1
Whooping Cough	1	2	3
Diphtheria and Croup	2		2
Influenza	6	1	7
Cholera Nostras			
Pyemia and Septicemia			
Tuberculosis	34	40	78
Cancer	22	12	34
Rheumatism and Gout	1		1
Diabetes	2		2
Alcoholism	1		1
Encephalitis and Meningitis	1	2	3
Locomotor Ataxia	1		1
Congestion, Hemorrhage and Softening of Brain	20	14	34
Paralysis	4	1	5
Convulsions of Infancy	1		1
Other Diseases of Infancy	10	5	15
Tetanus	1		1
Other Nervous Diseases	1		1
Heart Diseases	74	39	113
Bronchitis	4	4	8
Pneumonia and Broncho-Pneumonia	22	22	44
Other Respiratory Diseases	1		1
Ulcer of Stomach	1	1	2
Other Diseases of the Stomach	2	2	4
Diarrhea, Dysentery and Enteritis	11	10	21
Hernia, Intestinal Obstruction	2	3	5
Cirrhosis of Liver	7	5	12
Other Diseases of the Liver	4	1	5
Simple Peritonitis			
Appendicitis	1	3	4
Bright's Disease	32	22	54
Other Genito-Urinary Diseases	13	9	22
Puerperal Diseases	1	4	5
Senile Debility	1		1
Suicide	3		3
Injuries	19	19	33
All Other Causes	30	19	49
TOTAL	342	240	582

Still-born Children—White, 16; colored, 17; total, 33.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1000 per Annum for Month—White, 14.87; colored, 28.24; total, 18.48. Non-residents excluded, 15.25.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure. 30.21

Mean temperature. 59.

Total precipitation 0.34 inches

Prevailing direction of wind, northwest.



W. S. S.
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NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

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Vo LXX

FEBRUARY, 1918

No. 8

EDITORIAL

THE OUTLOOK FOR THE INTERN.

It is rather authoritatively stated that no graduation classes in the last three years have contained any number of native-born at the medical colleges of France and that the student body largely consists of foreigners, mostly from South America. In England much the same condition has prevailed.

In this country the situation has been saved by the action of the War Department in placing all medical students, physically qualified, in the Medical Enlisted Reserve. Hospitals, too, have been conserved by enlisting the first-year interns in like manner.

It is generally understood that this plan is to continue, unless grave emergency should dictate a change of policy. Medical schools will now be able to go on in preparing material for service later on, if need still exists.

There is a natural unrest among the civil hospitals over the intern situation for the coming year and thereafter. It is quite certain that all hospitals must come to the one-year service while the war lasts, for, aside from the military need of young doctors, there is in the interns themselves that degree of patriotism which constantly urges them to go into the service, and, while they may be willing to serve one year in a hospital, they will not serve longer than that.

It should not be difficult to arrange for a one-year service and to provide enough interns to go around. It will require the coöperation of the Surgeon General's office to have these graduates, now on military order in the Medical Enlisted Reserve, detailed to particular hospitals for the period of a year.

Such understanding will make for better trained men for the army, as the hospital experience will qualify the interns in a way which will make them at once available for base hospital duty.

The disciplinary regulation which requires systematic report on the interns will make for a better service for the hospital. Hitherto it has been far from easy to get adequate service out of most interns, but now the intern must satisfy the government requirements in the reports to be made at regular intervals by the hospital superintendents. Such intern service from now on should mean more than it ever did before.

It has been a common observation that the hospital intern, for the most part, has never really appreciated his opportunities, but has, in most cases, taken a perfunctory interest in all but some particular field. He supererogates an importance to himself which his position never contemplated or warranted. The military organization needs well trained men and it needs men trained in all fields.

The lack of fitness of many now in the Medical Reserve is obvious, and it is being met, and will be met, by sending such men to schools for instruction. Even men with established ability in some branches of medicine are being sent to schools for instruction in other branches, so as to round out their preparation. The intern has most of such opportunities at hand, if he has the good luck to be attached to a large hospital in a city or has service in a hospital where teaching is carried on.

Physical diagnosis, internal medicine, neurology, with psychiatry,

pathology and laboratory technic, are each as important as surgery, and minor surgery is especially a field for preparation.

The intern in his spare time can study and learn the problems of war surgery as presented in so many valuable contributions in the current medical journals and in books already published. Laboratory men with proper training are needed, and the training in a hospital laboratory is useful.

It takes a short time only to place a qualified man who is willing and apt, and the man with proper hospital training has a great advantage if he fulfils these conditions.

We appear to be at the beginning of a greater struggle, and the largest burden of success will rest on the medical profession and its younger men. The degree of that success must be measured by their willingness and by their ability to engage the task.

VITAL STATISTICS IN LOUISIANA.

The first legal provision for compiling vital statistics for the entire State of Louisiana was made in Act No. 162 of 1900. That act required practicing physicians and midwives to make monthly reports to their respective parish health officers, who, in turn, were required to forward quarterly compilations of such reports to the Secretary of the State Board of Health, by whom all necessary blanks were to be supplied. In any parish where there might be no health officer, reports of births and deaths were to be filed with the Coroner. It was also provided that the Secretary of the State Board of Health should tabulate all such returns thus filed, and should publish same in the bi-ennial report of that Board, as was faithfully done during the decade that followed.

It is to be noted that Act No. 162 made no provision for filing individual certificates, but merely called for a statement of the number of births and stillbirths, according to color and sex, with a similar report of deaths and causes of same. The Secretary of the State Board of Health took advantage of the opportunity to introduce the international (Bertillon) list of causes of death, by printing same on the back of the form supplied for quarterly reports of health officers and by urging all concerned to conform to its nomenclature.

It need hardly be remarked that, while Act 162 paved the way for future progress, the results which it gave were practically worthless for statistical purposes.

Following the Census of 1910, the Louisiana State Board of Health, realizing the inadequacy of the existing law, formally adopted, as Chapter X of the Sanitary Code, the basic principles of the "Model Law" prepared by the United States Bureau of Census, with the collaboration of the American Medical Association, the American Bar Association and the American Public Health Association, with the object of providing for uniformity and efficiency in compiling vital statistics.

It is only since the adoption of that law by a number of States that any real progress has been made in the United States as regards the registration of births and deaths, and if any additional evidence should seem necessary to show its beneficent action, recent progress made in Louisiana speaks for itself.

The essential features of the Model Law are its requirements that a certificate of a standard form shall be filed for each birth and death; that physicians, undertakers, midwives, parents and others specified shall be held responsible, under penalty, for the filing of such certificates, and that adequate facilities be provided for the custody and permanent preservation of all certificates, after same have been duly classified, numbered, indexed and bound as public records of priceless value.

A highly important feature of the Model Law is its provision for the appointment of a sufficient number of local registrars in incorporated towns and adjacent rural districts. The initial difficulty of meeting that requirement was such as to seriously impede the operation of the new system in Louisiana, where the idea prevailed that registrars should all be physicians, and it was not until the President of the State Board of Health secured the consent of the United States Postoffice Department, in 1913, for the twelve hundred and odd postmasters in the State to serve as registrars that a working basis was reached.

In November of the same year the Department of Vital Statistics was reorganized under a "whole-time" State registrar, with an adequate but separate clerical force, since which time the work has increased at such a rate that in 1916 a staff of eight clerks was required. The progress of the work itself may be judged from the fact that in 1913 the entire State, outside of New Orleans, recorded only 1,959 births and 1,654 deaths, while the totals recorded for 1916 were 28,009 births and 14,053 deaths from the same territory.

It is considered highly desirable for Louisiana to be admitted to the Registration Area of the United States Census Bureau, as a con-

dition to which the State must record not less than 90 per cent of an estimated total of births on a basis of 25 per 1,000 of population per annum, and a corresponding total of deaths at a rate of 15 per 1,000 of inhabitants.

To accomplish that result, it is necessary that the people at large, and especially the physicians of the State, give their full and hearty support to the work.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

A DISCUSSION OF SOME PRINCIPLES OF ANTHELMINTIC MEDICATION.

By MAURICE C. HALL, Ph. D., D. V. M.,
Parasitologist, Research Laboratory, Parke, Davis & Co., Detroit, Mich.

There are certain general principles of anthelmintic medication that may be more or less tentatively proposed from the standpoint of theory, or from the clinical experience of many workers, or on the basis of experiments performed in this laboratory up to the present time. Some of these principles seem to me to be fairly well established; others are in contradiction to common beliefs and so open to more suspicion of error. At this stage of our knowledge in regard to anthelmintics, statements should be made tentatively, as a rule. It is a subject which needs and deserves much more study.

The general principles which, for the most part, I wish to discuss, rather than to urge, are as follows:

1. Anthelmintics are selective in their action; at least their dependable effectiveness is limited to certain sorts of worms.

This follows from differences in structure, physiology and habit on the part of the worms. This principle would scarcely seem worth stating or defending, except for the fact that some writers have disputed it. Most medical practice assumes that it is true, and numerous experiments in this laboratory show that certain drugs which display great anthelmintic properties against certain

kinds of worms may be given in doses approximating the lethal dose or given in therapeutic doses over long periods of time without exerting any apparent effect on other worms occupying similar positions in the digestive tract. These experiments, which will be published later in the discussions of anthelmintics, confirm the general idea that certain drugs are of value against tapeworms, but not against nematodes; that others are of value against ascarids, but not against hookworms; that others are of value against hookworms, but not against tapeworms; etc. It is true, to be sure, that such a drug as male fern will occasionally remove some hookworms, and that such a drug as oil of chenopodium will remove an occasional tapeworm, but so far as dependable action is concerned, anthelmintics cannot be used over such a wide range.

Along this same line, it may be said that anthelmintic activity on the part of a drug is not proportional to antiseptic properties and that the published statement to the effect that verminous infestations can be combated best by antiseptic treatment cannot be accepted. Some of the best anthelmintics have very little germicidal power, while experiments show that excellent germicides have little anthelmintic power and that even those displaying a moderate anthelmintic power are usually severe in their effects on the host animal. In passing, it may be noted that germicidal power and insecticidal power are likewise unrelated as a rule.

2. As a further development of the above principle of anthelmintic selectivity, it may be stated that certain kinds of worms require not only a suitable anthelmintic, but also suitable modes of medication, whereas other worms only require the simple administration of a single therapeutic dose of a suitable drug.

The above statement may be briefly elaborated as follows:

(a). Forms like the ascarids, which inhabit the small intestine and lie unattached in the lumen, are readily accessible to the ordinary types of anthelmintics—the type which is usually said to be comparatively insoluble in the host intestine, and so believed to exert its effect on the worms with which it comes in contact while producing a minimum amount of systemic effect on the host owing to low solubility and slight absorption—and ascarids may be entirely removed by a single therapeutic dose of oil of chenopodium in the great majority of cases if only the usual precautions as to preliminary fasting are observed.

In this connection it may be noted that Lutz¹ states that ascarids, probably on account of their size, are more difficult to remove than other worms. All our experience is distinctly contrary to this, ascarids being the easiest of all worms to remove. However, Lutz was referring especially to the necessity for repeated treatments with santonin, and all our experiments confirm the idea that repeated doses of santonin are usually necessary to assure the removal of ascarids. Lutz did not have a suitable drug for the removal of all ascarids at a single dose. As a matter of fact, the action of oil of chenopodium against ascarids in removing 100 per cent of all worms present in a large majority of cases, where it has been properly used in single dose in the experiments in this laboratory, is not duplicated by the action of any other drug in single dose against any worm in experiments here or in the work of Hall and Foster² at Washington.

Contrary to Lutz's statement, Railliet³ states it as a general rule that large worms are more vulnerable than small ones. This accords with our experience: Adult ascarids are more easily removed than larval ascarids or the smaller hookworms; hookworms are more easily removed than *Strongyloides* or the small trichostrongyles, the last two being very difficult to remove, so much so that Stiles⁴ has recently stated that no satisfactory treatment for *Strongyloides* in man is known. This condition may arise in part from the ability of small worms to protect themselves by a position in small food masses or under mucus.

(b). Forms like the hookworm, which attach for indefinite periods to the intestinal mucosa and occasionally detach and remain free in the lumen of the intestine for a time before attaching again, show a response to anthelmintics which may perhaps be correlated with this habit of attaching and detaching. In experiments where there is more than a very light infestation it appears that one anthelmintic treatment will usually remove only a part of the worms, and the same is true in clinical experience. As Lane⁵ says: "No single course of treatment by any known drug or combination of drugs can be relied upon to expel all the ankylostomes which are present." It is possible that a particular anthelmintic is effective only or principally against those worms which are attached at the time, or only or principally against those which are detached at the time, as the case may be. And it is possible that one anthelmintic would be effective against those which were attached while another might be effective against those which were

detached. If this is true, effective treatment will commonly require repeated doses of anthelmintics in order ultimately to remove all the worms present, or it will require a combination, as yet unknown, of remedies that will exert a complementary effective action, i. e., one acting on the attached and one on the detached worms. Of course, this explanation of the failure of single hookworm treatments to achieve more than partial success, as due to the presence of one attached and one detached group of worms, is only theoretical. Other explanations would be that worms which were feeding at the time of treatment were susceptible to the anthelmintic, that individual worms had greater resistance or were better protected by mucus, etc. There is little evidence one way or another. In support of the idea that successful treatment is related to the attaching habit, there may be cited the suggestion noted by Hall and Foster⁶ that the efficacy of chloroform against hookworms may be due to the rapid absorption of the chloroform by the blood and the ingestion of this chloroform-containing blood by the attached hookworms in amounts sufficient to produce anesthesia or lethal toxic effects.

(c). Forms like the whipworm, located for the most part in the cecum, are apparently not always exposed to the action of anthelmintics even when adequate doses of potent drugs are given. This is not merely due to the fact that anthelmintics are partly absorbed and more or less diluted by the time they reach the ileocecal valve, though this factor must be taken into consideration in anthelmintic treatment for parasites located in the large intestine, but it is principally due to the fact that not everything that passes the ileocecal valve enters the cecum. This is a point that I have previously noted⁷ and in this connection I have suggested that in treatment of whipworm cases it may be found good practice to administer anthelmintics in small doses over a long period of time to ensure the entrance of the drug into the cecum. The experiment work done in the laboratories of the U. S. Bureau of Animal Industry and in this laboratory indicates definitely that a number of anthelmintics are effective against whipworms when they come in contact with the worms. As a rule the administration of an anthelmintic brings away no worms, but when it brings away any, as it occasionally does, it not uncommonly brings away all of them. Experiment work done in this laboratory indicates that the administration of small doses—which must not, however, be too small—of anthelmintics over long periods of time, in order to ensure their entrance into the cecum, is apparently the best mode of treatment

for these worms. It is necessary to work out for each drug the minimum dose which exerts any anthelmintic efficacy, as it appears from experiments that too small doses will have no effect even if administered over very long periods. Fortunately, the whipworm appears to have comparatively little resistance to drugs that actually reach it. This is the more surprising in view of the fact that the whipworm has the habit of sewing the long narrow anterior portion of its body into the mucosa. It may be that the exposed posterior portion is the part through which the anthelmintic takes effect, or it may be that the anthelmintic is absorbed by the cecal mucosa and takes effect, perhaps by ingestion, on the part buried in the mucosa.

In man, the presence of the appendix constitutes another complication. Presumably only a part of the intestinal contents which pass the ileo-cecal valve enters the cecum, and of this only a part in turn enters the appendix. In other words, it would probably take a certain amount of repeated treatment to remove worms from the cecum and an even greater amount of treatment, as a rule, to remove them from the appendix. Berard and Vignard^s state that it has not been proved that anthelmintics exert any effect on parasites in the appendix, and that Railliet's clinical experiments seem to show that the worms remain alive after the administration for several days of the most powerful vermifuges. Berard and Vignard reach the rather surprising conclusion that it is necessary to respect the appendix as a step in eliminating intestinal worms.

(d). Just in passing, it may be noted that in the field of veterinary medicine the administration of anthelmintics is complicated by anatomical considerations in the case of the host animal which are not present in the case of man. Thus the work of Hall and Foster in the Bureau of Animal Industry showed that in a general way volatile anthelmintics, such as chloroform, should not be administered to ruminants, not only because of the incidental danger of inhalation pneumonia, but also for the reason that such substances go very largely to the rumen, or storage stomach, and are absorbed with resultant systemic effects before they can pass to the abdomen, or true stomach, to exert anthelmintic action. This finding has recently been published in a note by Dr. Ransom, the chief of the Zoological Division of the Bureau. It is probable that the substances named are largely volatilized by the time they have passed through the esophagus.

3. Fluid extracts or other preparations using alcohol as a

solvent for active anthelmintic ingredients are frequently unsuitable as anthelmintics.

Experiments in this laboratory on a number of such preparations indicate that there are good objections to some of these preparations. In the first place, the very fact that alcoholic preparations are adapted to the production of rapid systemic effects—the effects one wishes to avoid in using the characteristically toxic group of drugs known as anthelmintics—is one reason why they are unsuitable as anthelmintics. These alcoholic preparations are often rapidly absorbed, largely in the stomach and duodenum, occasioning more or less irritation at the point of absorption and producing systemic effects of a more or less toxic nature. The considerable and rapid absorption leaves a comparatively small amount of drug available for actual anthelmintic action, and by the same token leaves the minimum of drug that could possibly be removed by purgation after exerting its anthelmintic effect. In the writer's opinion some alcoholic preparations of anthelmintics are distinctly dangerous to the host animal and relatively ineffective against parasites, and this opinion is substantiated by quite a number of experiments in this laboratory and seems to accord with the record of a number of "worm remedies" of this character.

This opinion is rather contrary to that expressed by Eeckhout. He makes one group of anthelmintics for those which are toxic and highly soluble and in which the absorbed material is rapidly eliminated. The important members of this group he names as follows: Turpentine, carbon bisulphide, chloroform, ether and alcohol. According to him, turpentine and carbon bisulphide are very toxic for intestinal worms, while chloroform, ether and alcohol are much less so, but also less dangerous to the host. He states that it is always an advantage to incorporate in a vermifuge some such narcotic as chloroform, ether or alcohol. In the writer's experience, turpentine is distinctly anthelmintic; carbon bisulphide is apparently anthelmintic but needs further study to determine its indications; chloroform has decided anthelmintic value against hookworms, but comparatively little against ascarids, whipworms, etc.; ether has very little anthelmintic value; and alcohol has practically none. If alcohol had anthelmintic value, it would appear that the human race should have been freed from most of its parasites long ago. Moreover, as stated above, experiment shows that alcohol is distinctly disadvantageous in some anthelmintics; it makes some active principles soluble, but while the absorbed alcohol

solvent is rapidly eliminated, the active anthelmintic ingredients simultaneously absorbed are not rapidly eliminated but are left to injure the host animal. If alcoholic preparations of anthelmintics are to be used at all, it would seem advisable to dilute them very greatly before administration in order to throw the anthelmintic out of solution and delay absorption. In some anthelmintics it is probable that the active constituents would be promptly thrown out of solution on contact with the buccal, esophageal and gastric mucosa, and that there would be little or no rapid absorption.

It is interesting to note that Bozzolo⁹, who was the first to use thymol against hookworm, in 1879, originally advocated the administration of a glass of strong wine or some alcoholic mixture after each dose of thymol in capsules, in order to facilitate solution of the drug. Thirty years later, he is still of the opinion that his patients were not poisoned and thinks the thymol was probably more effective when given in this way.

4. Anthelmintics of the supposedly insoluble type are not as insoluble as they are commonly supposed to be.

This fact was shown in the investigations of thymol by Schultz and Seidell¹⁰ and by Seidell¹¹. Seidell states: "Of the thymol administered, from one-half to two-thirds is apparently destroyed or temporarily fixed in the body." "The simultaneous administration of olive oil apparently caused very slight if any effect upon the percentage of excreted thymol. It is a question, therefore, whether oils really increase the amount of absorption of thymol or only the rate."

The writer's experience bears out what is said and suggested above. In giving large or repeated doses of oil of chenopodium, the feces commonly have the distinctive odor of this oil, but small doses do not give this result as a rule, and must be very largely absorbed. The elimination of this drug or its fate after absorption does not appear to have received sufficient study as yet. Salant and Livingston¹² state that after intravenous injections of large amounts of oil of chenopodium it may be detected in the respired air, but not in the urine or bile. However, I have been unable to find any papers dealing with tests for oil of chenopodium in the urine or stating the form or product in which this oil might be expected to occur after absorption and modification in the body.

There is quite a little written in the literature of anthelmintics in the way of warning regarding the use of such solvents as castor oil, milk, alcohol, etc., in connection with the use of certain drugs,

such as thymol and oleoresin of male fern. It is commonly stated that as these drugs are soluble in the solvents specified, the use of these solvents will result in the absorption of an otherwise comparatively insoluble drug. It appears from the work of Schultz and Seidell and of Seidell that these comparatively insoluble drugs are largely absorbed in any case, regardless of the simultaneous use of such solvents as olive oil. Seidell makes the suggestion, noted above, that oils increase the rate of absorption rather than the amount. This seems to be a very good point and one that deserves some elaboration. In my opinion, there are two factors to consider in connection with the rate of absorption. One is the local effect of rapid absorption and the other is the systemic effect. When such toxic drugs as anthelmintics are rapidly absorbed, it means that the brunt of the irritation and insult due to the drug is borne by a rather limited section of the digestive tract; that a large amount of comparatively concentrated drug is taken in over the gastric and duodenal mucosa, and possibly by that of the upper jejunum. Experiments, clinical symptoms, and the occasional necropsy on the human victim of an overdose of anthelmintic show that such drugs as male fern, thymol or oil of chenopodium can be highly irritating to the digestive tract when absorption is sufficiently rapid. In experiments in this laboratory, the postmortem examination after the ingestion of these and similar drugs not infrequently shows an unsuspected degree of gastro-enteritis and suggests that this condition is present in the human patient rather often, an idea which finds support in many published reports. In addition to the local irritation of the digestive tract by rapidly absorbed anthelmintics, there is the factor of the systemic effects due to the sudden imposition of a considerable amount of anthelmintic which must be disposed of by the body economy in bulk instead of piecemeal. It would appear that what is desired in anthelmintic administration is, first, as little absorption as possible, and second, since there must be some absorption, probably a large amount as a rule, it is desirable to retard that absorption in order to distribute it over as large a surface of the gastro-intestinal mucosa as possible and to allow the maximum time for the body gradually to dispose of the drug by oxidation and elimination.

In this connection I wish to note that in my experiments olive oil seemed to be decidedly contraindicated in common with anthelmintics, whereas I did not find this to be the case with castor oil. Salant and Nelson ¹³ state that oils and fats, including olive

oil, probably reduce the toxicity of oil of chenopodium, though they did not find this action constant. It is possible that they are right in attributing such a result to the modifying action of glycerides, as well as to the suppression of acute symptoms by the oils, and yet other factors may offset this action. In the case of olive oil, our postmortem examinations indicate that mixtures of this oil and oil of chenopodium are absorbed largely in the stomach of experiment dogs with the production of gastritis, sometimes very severe. In this connection we may note the following statements in regard to olive oil by Asnis¹⁴: "Because hydrochloric acid has no effect on the olive oil and because of all foods it remains longest in the stomach, hence as a lubricant and as a protective agent it is unexcelled." Chenopodium itself exerts a depressant effect on the musculature, tending to produce stasis. In our experiments, the tendency of a mixture of olive oil and oil of chenopodium is to remain in the stomach until largely absorbed, causing gastritis, and this constitutes an objection to the combination. It is undesirable that an anthelmintic intended to remove worms from the small intestine should remain in the stomach producing irritation and undergoing absorption. In other words, the action of the olive oil is very similar in this respect to that of alcohol.

It is the purgative character of castor oil, its tendency to move promptly through the digestive tract, which appears to be responsible for the more satisfactory results obtained from the combination of castor oil and oil of chenopodium. Although there is absorption of castor oil as well as of olive oil, the absorption of castor oil appears to be such as to distribute the chenopodium content over a wider area and a longer period of time.

As regards the common statement that castor oil should not be given in connection with the oleoresin of male fern, I hesitate to question what is evidently intended as a safeguard in the administration of this drug. However, I wish to state that I have given oleoresin of male fern in doses of 20 mils, a dose Winslow¹⁵ mentions as lethal, to a number of dogs as follows: Dog No. 145, weighing 11.5 kilos, received 20 mils of oleoresin of male fern and 60 mils of castor oil; the dog survived the treatment and was killed 6 days later. Dog No. 131, weighing 7.5 kilos, received 20 mils of oleoresin of male fern and 60 mils of castor oil; the dog survived the treatment and was killed 8 days later. Dog No. 171, weighing 8.25 kilos, received 20 mils of oleoresin of male fern and 30 mils

of castor oil; the dog survived the treatment and was killed 8 days later. Dog No. 172, weighing 10 kilos, received 20 mils of oleoresin of male fern and no castor oil; the dog was very sick and died the sixth night following the treatment. Dog No. 185, weighing 8.5 kilos, received 20 mils of oleoresin of male fern and 6 grains of calomel; the dog survived the treatment and was killed 9 days later.

The above experiments indicate that oleoresin of male fern is more dangerous without the administration of a purgative than with the administration of a purgative; that it is more dangerous without purgation than with the use of castor oil as a purgative; that so far as our experiments show anything—and we do not regard these experiments as conclusive, of course—adequate doses of castor oil, promptly administered, are as good in this connection as calomel, and perhaps as good as anything. Without caring to take a radical position in this matter, we are of the opinion that caution in regard to male fern should emphasize the need of adequate purgation rather than the danger from castor oil. If castor oil were as dangerous as it has been said to be, its use should make a sub-lethal dose lethal by increasing absorption; in actual tests its use makes a dose that is lethal in the absence of purgation non-lethal by aiding in elimination. Whether there is a dose of oleoresin of male fern of over 20 mils that would be non-lethal to an average-sized dog in connection with the use of some such purgative as a saline and lethal in connection with castor oil, I do not know. However, I am inclined to doubt it. I am inclined to believe that the distributive and purgative action of castor oil goes far to offset the solubility factor in the case of male fern. Winslow and many other writers have published prescriptions or given directions for the use of castor oil as a purgative for male fern, and anthelmintics are marketed which contain both ingredients. As far as solubility is concerned, oil of chenopodium is as soluble in castor oil as male fern is, perhaps more so, but many experiments with oil of chenopodium indicate that its administration in castor oil gives superior anthelmintic value against some species of worms, at least, and maximum safety to the host animal. In support of this last statement and of the foregoing contentions in regard to the danger in the use of olive oil, the following experiments may be noted:

Dog No. 29, weighing 10 kilos, was given 90 minims of oil of chenopodium in soluble elastic capsules, preceded by 65 mils of

olive oil and followed by 35 mils of olive oil. This was in the morning. Examination two and a half hours later showed that the dog was very sick, and it was given an additional 50 mils of olive oil. The dog died that night. Postmortem examination showed the stomach to be intensely hemorrhagic and the entire intestinal tract inflamed. The dose given was a lethal dose and the 150 mils of olive oil did not protect the dog against it.

Dog No. 29, weighing 10 kilos, was given 90 minims of oil of chenopodium in soluble elastic capsules, preceded by 45 mils of castor oil and followed by 45 mils of castor oil. Examination an hour and a quarter later showed that the dog was sick but sitting up, and it was given an additional 35 mils of castor oil. The dog seemed all right the next day and was killed the fourth day. On postmortem all the viscera appeared to be normal, except for an inflamed area in the rectum. The dose given was a lethal dose, but the 125 mils of castor oil afforded ample protection against it.

Dog No. 46, weighing 25 kilos, was given 20 mils of oil of chenopodium in soluble elastic capsules, 2 mils of chloroform, and 60 mils of castor oil; 7 days later, this dog was given 75 minims of oil of chenopodium, 5 mils of chloroform, and 60 mils of castor oil. Thirteen days later this dog was given 75 minims of oil of chenopodium in soluble elastic capsules, 5 mils of chloroform, and 60 mils of castor oil. In two weeks, therefore, the dog received 170 minims of oil of chenopodium, or almost 3 drams, in addition to 12 mils of chloroform. The dog was killed on the twenty-fifth day and the stomach showed a couple of small inflamed areas, the duodenum was slightly congested and the cecum showed two small inflamed areas. I assume that the large dose of castor oil administered to this dog protected it from injurious effects from the chenopodium.

In a series of dogs given oil of chenopodium in therapeutic dose accompanied by olive oil alone or by olive oil and some purgative, almost all of the dogs showed a hemorrhagic condition of the stomach or small intestine on postmortem, a condition which was rarely met with in postmortem examination of a large series of dogs given oil of chenopodium in therapeutic dose accompanied by castor oil. It may also be noted that where olive oil alone was given with the chenopodium, the dogs were usually much constipated and often did not pass feces for several days, a condition which must ensure the absorption of practically all the chenopodium given.

5. Anthelmintics, at least some anthelmintics, probably do not need to be allowed "time to act" on the worms before purgatives are administered.

The above proposition is stated tentatively. It is so generally believed and stated that anthelmintics should be allowed time to take effect before any purgation is attempted, that it seems almost unsafe to dispute the proposition. Dock and Bass ¹⁶ even explain the failure of remedies to act effectively as possibly due to "the rapid carrying down of the thymol by peristalsis to below the location of the worms," even in the absence of purgation. My own experiences have led me to fear more the absorption of the drug in the stomach before reaching the site of the worms. In over two years' experiment work, involving the treatment and postmortem examination of over 250 dogs, the results seem to be a little better, if anything, where the anthelmintic and the purgative are administered simultaneously than where the anthelmintic is allowed to precede the purgative by an hour or longer. Such combinations as oil of chenopodium and castor oil, chloroform and castor oil, santonin and calomel, etc., seem to be as effective as the ingredients of the combinations administered separately and at intervals. It is well known, of course, that such anthelmintics as areca nut are themselves purgative and that some ordinary purgatives are to a slight extent anthelmintic, though not to the extent that they deserve to be called anthelmintics.

Even if it were true that anthelmintics are more effective if purgation is postponed, and it can be shown that the patient is safer where the purgation is given with the anthelmintic, would it not be good practice to repeat a safe treatment oftener than to give a less safe treatment fewer times? Of course, in practice there are other factors involved.

6. Preliminary fasting is important.

This proposition is generally accepted, though an occasional writer seems to regard preliminary fasting as of little importance. Experiments in this laboratory and in the U. S. Bureau of Animal Industry have convinced me that it is bad practice to give anthelmintics to patients with a stomach full of food. The drug is diluted to a point where it exerts a minimum amount of effect on the worms, and sometimes a drug of known potency in adequate therapeutic dose will fail to bring away any worms when given to experiment animals under these conditions. During gastric di-

gestion there is a hyperemic condition of the gastric mucosa and the absorption processes are active, so that a certain amount of the drug is probably absorbed at this point. Such of the anthelmintic as leaves the stomach with the chyme is too diluted, and the worms themselves are too well screened by the mass of partly digested food to permit of effective anthelmintic action. In our experiments the evidence on this point has been convincing. Attempts to treat animals like sheep and swine by the administration of anthelmintics in the food have resulted in failures or indifferent successes, and it appears that such a line of treatment would have to be prolonged and repeated over long periods to attain any reasonable success, with all that such repetition might involve in the way of cumulative toxic results. In a recent paper the writer ¹⁷ has pointed out that the desirability for fasting before anthelmintic treatment was not due, as has been often stated and too commonly believed, to the parasites becoming starved and so ingesting the anthelmintic more readily.

7. Gastric stasis might occasionally interfere with the efficacy of anthelmintics.

I have stated elsewhere ¹⁸ that "Nothing known to us in the way of vermifuges can be depended on to remove all worms present even in repeated doses in all cases, as there are conditions little understood which at times appear to inhibit the action of even reliable vermifuges." Some of the postmortem findings on experiment dogs in this laboratory suggest that the failure of anthelmintics might at times be due to gastric stasis. An occasional animal is found with a large, distended, atonic stomach and occasionally dogs are found with a stomach that is apparently normal in appearance, but containing food known to have been fed one or two days previously. It would appear that in such cases anthelmintics might lie in the stomach for long periods or be slowly absorbed there; that where the anthelmintic remained unabsorbed by the atonic mucosa it would sooner or later be diluted by the food and drink subsequently ingested by the animal and so rendered ineffective. It should be admitted, however, that in our cases, anthelmintic treatment was usually as effective as could be expected, though the fact that the anthelmintic in these cases was given with a purgative may explain its prompt passage even from an atonic stomach and its subsequent efficacy. I believe gastric stasis might be reasonably invoked as the explanation for occasional failure in anthelmintic

medication, especially where purgation follows treatment at a long interval and where such depressant or constipating drugs as oil of chenopodium are used.

8. The passage of worms following anthelmintic treatment is a better indication for repeating or continuing treatment than for stopping treatment.

As has been noted previously in this paper, the action of oil of chenopodium against ascarids is the only case in which we have commonly found approximately 100 per cent efficacy against worms in single, therapeutic dose of an anthelmintic, and this drug will occasionally fall below this point in efficacy. In common practice too many medical men regard the passage of worms as evidence that the treatment has done its work, whereas the real test of an anthelmintic is to be made on the basis of the worms not removed. A patient may pass a large number of worms, and have a much larger number left. When a well-selected treatment finally fails to bring away worms it establishes a fair presumption to the effect that all worms of the sort involved have been removed. This, of course, should be checked up by a consideration of the persistence or disappearance of symptoms, and, even more, by microscopic examination of the feces for parasite eggs. The latter should extend over a period of perhaps two weeks after treatment and should cover several days in that period if accurate information is desired, as it seems well established that anthelmintic treatments may inhibit worm egg production for some time, and it requires several negative examinations of feces to establish a fair presumption in favor of freedom from infestation where infestation is suspected or known to have existed.

9. Severe helminthiasis calls for caution in administering anthelmintics.

In other words, severe helminthiasis, with a feeble, emaciated patient suffering from enteritis as a result of numerous worms and with the bodily resistance already much lower as a result of worm toxins, is itself a contraindication for anthelmintic treatment both as regards the production of local irritation in the digestive tract and the production of toxic systemic effects. More than once I have had weak experiment animals heavily infested with worms die soon after the administration of an anthelmintic. It is quite likely that these animals would have died very soon as the result of worm infestation, but it was evident that the ordinary plan of attack,

suitable for reasonably strong animals with moderate infestations, was not suitable for these animals. It has been recognized in dealing with hookworm disease in man that bad cases, with pronounced anemia and well-developed clinical symptoms of the disease, must be treated with caution. The value of using repeated small doses of anthelmintic in such cases has been emphasized by Stiles and Leonard ¹⁹, and various writers have noted the need for preliminary building up of the bodily resistance by nutritious food. In the field of human medicine there is no disposition to over-emphasize this factor, but in the field of veterinary medicine it is not an uncommon thing to find writers who regard food as of more importance in cases of parasitic infestation than anthelmintics. This phase of therapeutic nihilism is explained by its advocates on the grounds that parasites do not seem to thrive in thrifty animals; the more obvious statement of this condition would be that thrifty animals are thrifty because, for one thing, of their freedom or comparative freedom from parasites. Therapeutic nihilism in the field of anthelmintics has little to sustain it. While the drugs used in this capacity are in need of much more study, they nevertheless include a number of demonstrably potent drugs serving a purpose that cannot be served by any means other than medicinal, except by way of prophylaxis.

10. While the majority of worms passed after anthelmintic treatment come away in the first 24 hours after treatment, there is a fairly large percent which will commonly come away from one to six or seven days later.

This delay is perhaps due to a poisoning of the worms which weakens or sickens them to the point where they are brought away some time after the anthelmintic treatment, or in other cases it appears to be due to intestinal stasis, which may not be overcome by the purgation employed. In our series of experiments on anthelmintics in this laboratory, using dogs as experiment animals, we found the following to be true where single treatments, not involving more than a few hours of one day, were given:

a. Ascarids: Approximately 82.7 percent were passed during the day after treatment, i. e., within 24 hours after treatment; 7.7 percent were passed the second day after treatment, i. e., within the second 24 hours; 4.3 percent were passed the third day after treatment; 3.1 percent were passed the fourth day; 1.5 percent were passed the fifth day; 0 percent were passed the sixth day; 0.5 percent were passed the seventh day.

b. Hookworms: Approximately 74.1 percent were passed the first day after treatment; 15.7 percent were passed the second day; 7.4 percent were passed the third day; 2.8 percent were passed the fourth day; 0 percent were passed the fifth, sixth and seventh day.

c. Whipworms: 57.6 percent were passed the first day; 15.2 percent were passed the second day; 18.2 percent were passed the third day; 10 percent were passed the fourth day; 0 percent were passed the fifth, sixth and seventh days.

d. *Dipylidium spp.*: 91 percent were passed the first day; 7.4 percent were passed the second day; 0 percent were passed the third day; 1.6 percent were passed the fourth day; 0 percent were passed the fifth, sixth and seventh day.

e. *Tænia spp.*: 100 percent were passed the first day; 0 percent were passed the second to the seventh days inclusive.

The number of experiments involving *Tænia* is really too small to warrant any general conclusions, but, accepting them on a par with the other findings, we may summarize the foregoing as follows:

For all worms concerned, after one anthelmintic treatment, from 57.6 percent to 100 percent of the worms came away the first day; in other words, a majority, over 50 percent, of those that came away within 24 hours after treatment. Aside from *Tænia*, where the percent for the second day drops to zero, there came away during the second day, from 7.4 percent to 15.7 percent of the worms that were removed. During the third day, or the third 24-hour period, there came away from 0 to 18.2 percent of the worms removed. During the fourth day, there came away from 0 to 10 percent of the worms. During the fifth day, there came away from 0 to 1.5 percent of the worms. There were no worms passed on the sixth day. On the seventh day, there came away from 0 to 0.5 percent of the worms passed. It must be understood that these figures are merely statement of the findings in our experiments, not at all intended as a statement of a rule, but they suggest that the physician who takes into account the feces for only 24 hours after treatment, may overlook things of importance.

The number of worms passed diminished each day with *Tænia* and hookworms; it diminished to zero on the sixth day with ascarids, but rose on the seventh day slightly; it diminished to zero on the third day with *Dipylidium*, but rose slightly on the fourth; it diminished on the second day with whipworms, but rose on the third, diminishing from there on to zero on the fifth day. An

examination of the figures for these worms seems to warrant the belief that with sufficient figures, all these worms would show a smaller number passed each day with the exception of the whipworm; there appears to be some ground for thinking that there is little difference in the chances of whipworms appearing the second or third day, and it may be that the number would be steadily greater on the third day than on the second, as a rule. The greater percent of the total number of worms passed which come away the first day is in this order: *Tænia*, *Dipylidium*, ascarids, hookworms, whipworms.

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A NOTE ON THE FATE OF THE OVA OF ANKYLOSTOMA INGESTED BY THE LARVÆ OF MUSCA DOMESTICA.*

By PERCY LENNARD QUERENS, M. D., New Orleans, La.
Nipe Bay Hospital; Preston, Oriente, Cuba.

Owing to the frequency of feces containing hookworm ova being exposed to flies, and the possibility of mechanical transmission of either the ova or the larval nematodes by the fly larvæ after ingestion, the following experiments were performed:

Infected feces was put into open containers and allowed to become contaminated with the ova of *Musca domestica*; fresh stools were also infected with half grown larvæ. The room temperature averaging twenty degrees Centigrade, the larvæ grew very rapidly and as no water was mixed with the stools the hookworm ova

developed very slowly. The fly larvæ were examined at intervals of twenty-four hours; ten at a time dissected, while a certain number were allowed to pupate.

The larvæ previous to examination were removed from the feces by means of a teasing needle, avoiding as much as possible the feces adhered to the exterior. Further, to avoid the external contamination, they were agitated in frequent changes of clean water, then centrifuged frequently to insure the separation of any ova that may have adhered to them. Centrifuging seems to be especially efficient for the larvæ if not centrifuged over a half-minute. At a speed of about one thousand revolutions per minute they quickly rise to the surface of the liquid when the centrifuge cups come to a stop, leaving the other matter at the bottom.

Dissection can now be performed and the entire intestinal tract gotten out by nicking both sides of the last segment, then pressing one teasing needle on the head and making traction on the last segment when the intestinal tract is pulled out entire. The gut is carefully examined and if any larval worms are present they can be readily seen moving about; in the thinner parts of the intestine, eggs, if present, can be seen, but usually, owing to the dark color of the contents, they are invisible. Numerous small punctures in the wall of the gut are made and the contents are quickly expelled by the peristaltic movements. This is easily examined and if any ova would be present they could be easily identified.

Of one hundred larvæ examined only one showed an ovum in its intestinal tract. This one was almost full-grown and ready to pupate. The ovum was much darker in color, irregular in contour, and in the place of a smooth clear shell only a thin membrane was present with numerous perforations. The contents, instead of being composed of numerous distinct cells, was a mass of clear hyalin material.

The adult flies were examined just after emerging and out of fifty dissections not one showed evidence of either ova or larvæ in their intestinal tracts.

Judging from the above experiments the possibility of transmission of *uncinaria* either of the ova or larvæ by the common house-fly appears very unlikely, for the ova when ingested seem to undergo digestion and likewise for the larvæ if eaten. Of course mechanical transmission by means of adult flies is an accepted fact, but that does not enter into the substance of this paper.

Further, the larvæ when about to pupate seek the higher dry places in preference to the vicinity of the feces and on emerging come forth clean, leaving all contamination on the exterior of the old pupal shell.

EXCESSIVE FEEDING THE CAUSE OF THE HIGH PER CENT. OF INFANT MORTALITY.*

By J. B. McMAHON, M. D., De Ridder, La.

Statistics show that nearly one-third of all deaths are of infants under one year. All animals rear their young with an almost unvarying certainty of their arriving at maturity without sickness of any sort. The young of man, only, are doomed to run the gauntlet of cruel and needless suffering from which but few more than half their number escape to reach adult age; while as said above, *nearly one-third* of all infants succumb the first year; and few of the remaining two-thirds escape a severe sickness, and about ten percent more die before reaching two years of age.

The infant death rate in New York City, "our great medical center," for the first quarter of this year was 3117; and in that city about fifty percent of the total deaths occur under the age of five years. God did not intend that these little ones should suffer and die any more than he did the young of the brute creation.

Dr. Charles Gilmore Kerley, Professor of diseases of children in the New York Polyclinic Medical School, recommends for a child under six weeks of age, nine ounces of milk, twenty-seven ounces of barley water, four teaspoonfuls of granulated sugar; given two to three ounces at two and one-quarter hour intervals; nine feedings in twenty-four hours. Consider that Prof. Kerley's six weeks' baby weighs ten pounds, and consider the needs of a working man to be equal in proportion to weight, a man weighing one hundred and fifty pounds should take fifteen times the quantity swallowed by the infant, or twenty-two and one-half quarts;—a quart for nearly every hour of the day and night, or allowing nine hours for sleep, then during each of the fifteen waking hours, he must swallow three pints of milk. It can readily be seen that the quantity is several times what could properly be taken in either case.

*Read before the Beauregard Parish Medical Society, June 7, 1917.

As has been indicated, the chief cause of infant mortality is excessive feeding.

From time immemorial the one great anxiety has been to keep the little darlings full of something from the time they come into the world until their little bodies are carried to the grave; or, by strange good luck, they survive until they reach the age of five years, when they are fed on something like the three-meal system, and as a result comparatively few die between five and twenty years of age.

In spite of these figures, or because their significance has not been noted, it has not occurred to the people and to but few doctors to begin with less meals.

Dr. Page, of Boston, in 1879 adopted the three-meal system of feeding his own child from the date of its birth, and she grew to be a healthy, well-developed child; and at four months sat up erect on the floor without support.

A well-fed babe should be comfortable, happy, thriving, with well-rounded body and limbs, as they usually are when they are born, and not gross with fat; wheezing, stuffed with so-called colds, with sneezing and nose running, which is only an effort of nature to relieve the clogged condition of the system produced by excessive feeding.

My observation has led me to believe that too much and too frequent feeding is the cause of a vast majority of gastro-intestinal diseases, instead of the quality of the milk as is usually held to be the cause. One cause of excessive feeding is the desire of the parents to have a fat baby, and to be able to say that he gains a pound a week, entirely ignorant of the normal growth of an infant from birth.

During the nine months of fetal growth, the increase, except in monstrosities, is about one-third of an ounce per day, or two and one-half ounces per week. Why should it be rational for this natural ratio to be increased six or seven hundred percent, directly after birth?

Because of the irrational, forced feeding during the first few months, the usual weight of the shockingly low percent of the little ones, who have survived this unnatural dietary, is much less at five years than if the age of prenatal growth had been continued throughout these years.

The Creator did not intend that a baby's stomach should be

treated like a toy balloon, nor that a baby should suffer any more inconvenience from cutting teeth than the puppy, calf, or colt, but it is the popular idea that when an infant begins to teeth it is peculiarly liable to intestinal trouble. In no sense is sickness an incident of the natural process of teething.

It is simply coincident and arises from the fact that it is at about this age that the system begins to break down under the excessive labor imposed upon the organs of digestion, assimilation, and excretion.

When I am called to a case of summer diarrhea, I stop all feeding for twenty-four hours or longer, with the exception of a little fruit juice occasionally, thereby giving the stomach a rest and nature a chance to eliminate the pathological condition, and then, if I can succeed in having the little patient properly nourished, it soon recovers with very little, if any, medication.

REPORT OF CASES.

1. Chancre of Nipple. 2. Carotid Body Tumor. 3. Ruptured Rectus Femoris Muscle, Chronic Myositis. 4. Dislocation of the Sternal End of the Clavicle (Forward). 5. Fracture of the Surgical Neck of the Humerus. 6. Remarks on Dichloramine T. 7. Splints.

By ISIDORE COHN, M. D., F. A. C. S., New Orleans.

The following cases were reported at the meeting of the Touro Clinical Society, November 7, 1917.

CHANCRE OF NIPPLE.

Case 1. Mrs. D. She first applied for treatment, for a sore on the left nipple, she had been treated by a quack with salves, pastes, and internal medication, etc. When first seen there was an ulcer involving the lower half of the left nipple—the edges were infiltrated, there was an area of redness surrounding the nipple, the glands in the axilla were enlarged. A history of having been bitten on nipple, over a period of three or four months. Wassermann triple plus. She was given three doses of salvarsan at week intervals. Besides the lesion on the nipple, she had a general macular eruption. The lesion cleared up entirely on the breast.

Subsequent treatment consisted of mercury 1 grain, intramuscularly, twice a week and iodide of potassium in increasing doses.

Differential Diagnosis: Chancre of Nipple

History of infection from mucous patches of syphilitic infant or from opposite sex.

Ulceration of neighborhood tissues, redness, even bluish hue may surround area of redness. Enlarged axillary glands, of recent origin. Other manifestations of **Syphilis** may be present. A positive Wassermann and dark field illumination, will clear up the diagnosis.

Paget's disease of the nipple: The earliest symptom appears on the surface of the nipple as a pimple, a pustule, a crack, a red patch, a scab, a horny crust or an excoriation. There may be "weeping," gradually the skin changes extend over the areola. At times there is itching.

When the affection is fully developed the skin is bright red, its surface looking as if lacquered, smooth, eroded, in places superficially ulcerated, and showing sometimes full granulations." "White Epithelial islets are often disseminated on the surface. The borders are always well defined, and polycyclic sometimes distinctly indurated. Often a little clear viscid fluid is discharged from the ulcerated surface or the bloody secretion from the nipple is noticed early in the disease."

In 49 out of 150 cases recorded by Sekiguchi, there was a history of having nursed children. Trauma plays little part. Sekiguchi says the disease "is really a primary cancerous degeneration" of the superficial lacteal ducts. (Abstract from S. Sekiguchi, *Annals of Surgery*, February, 1917.)

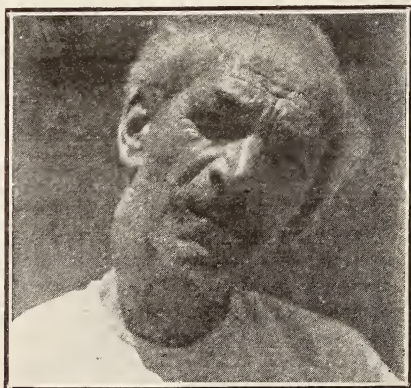
Adeno-carcinoma of the Breast. The age of the patient and the absence of a lump in the breast, would help to eliminate carcinoma.

Tuberculosis of the breast. The most frequent initial symptoms of the tubercular mastitis is a painless lump. "Tuberculosis runs a more rapid course than carcinoma" (Deaver).

Early fistulous formations. The majority of patients are robust women. The lymph nodes are enlarged in more than 50 per cent of the cases (Deaver).

CAROTID BODY TUMOR.

Case 2. Mr. A. E. Complaint: Mass in right side of the neck, which interferes with eating, insomnia, because of coughing. Operated



CAROTID GLAND TUMOR.

last year by Dr. S. The doctor was called after he had made an incision. He did not proceed with the operation. The mass has recently increased in size. Examination: There is a mass on the right side of the neck, which extends from the tip of the mastoid, down to the level

of the thyroid cartilage $4\frac{1}{2}$ inches in diameter. The mass is soft, movable, but not fluctuant, nor pulsatile. Over the surface of the mass there are several small nodular masses, probably lymphatics. Tonsils negative, except that the right is pushed forward by the mass. The tongue and buccal mucosa are negative. He has no similar masses anywhere else on body. Venereal history is negative. P.S.T. test 36 per cent, 2 hours. Operation: Believing this mass to be either a **carotid tumor or a lymphosarcoma**, I operated July 20. Ether anesthesia (Dr. Gage) Assistant Dr. Hebert. An incision was made from the tip of the mastoid along the anterior border of the sterno mastoid, as far down as one inch above sterno clavicular joint. After incising and retracting the platysma several large veins came into view. The sterno mastoid had been displaced outward by the prominent mass. A search was made for the carotid artery, below and above the level of the omohyoid. This muscle had evidently been cut out at the previous operation. **A large thick walled non-pulsating cord-like structure occupied the anatomic position of the carotid.** This "cord" entered the growth. It was impossible to remove the mass without cutting the "cord". Below the level of this cord the innominate and subclavian arteries could be felt. The internal jugular vein was closely adherent to the tumor. In order to avoid serious hemorrhage a large segment of the internal jugular had to be removed. The mass was then removed. On section it was found to contain a vessel with a clot in its lumen.

After the operation was over, the patient had a respiratory failure. After five minutes artificial respiration and amyl nitrite, atropin, oxygen, and lowering of the head of table, the patient began voluntary respiration. Pupils never again reacted to light. Patient however became restless during the afternoon. He moved both extremities. Temperature rose to 105.8° before death, which occurred at 6:30, July 30, 1917. No. autopsy. Dr. Lanford, pathologist, reported growth in right side of neck, tumor from neck; specimen is a mass, about the size of a pear; firm, moist, smooth, and brown in color. The cut surface shows a homogeneous mass and a medium sized blood vessel, somewhat sclerosed. Diagnosis, carotid body tumor.

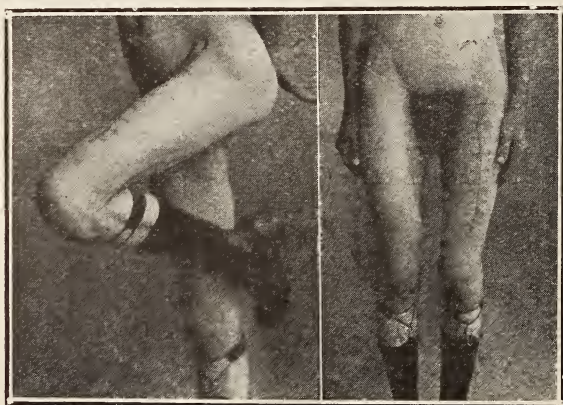
Carotid Body Tumor. Tumors of this body are rare in the young, one case was reported in a child of seven years. The majority of cases occur over 20 years. These tumors have frequently been described and studied, and only a few of the cases have been diagnosed pre-operative. The embryologic origin of these tumors is still uncertain, yet most authorities to-day consider the carotid body as a part of the sympathetic and the chromaffin systems. Callison and McKenty describe it as a body 5 m. m. long and 3 m. m. wide and about 2.5 m. m. thick, lying in the bifurcation of the common carotid artery, of doubtful origin, and undetermined function, inconstantly present and occasionally giving rise to tumors of definite structure. The carotid body is abundantly supplied with nerves, receiving branches from the vagus, glossopharyngeal, superior laryngeal and superior cervical sympathetic. The manifestations of the disease are illustrated by the case cited. The mortality statistics are high. Permanent post-operative complications are frequent, aphonia, hemiplegia and exophthalmos are noted in the literature.

RUPTURED RECTUS FEMORIS MUSCLE.**(Perfect Functional Result.)**

Case 3. Mr. W. While running for a base in a game of ball, and without striking anything, he noticed a pain in the left thigh. **He slid after feeling the pain.** The pain did not prevent him from playing the last innings. He walked home without difficulty, used witch hazel and alcohol and obtained no relief. He used Sloan's liniment, which increased the pain. Monday he was unable to attend his duties. Tuesday he was slightly better, after walking the swelling and pain recurred. The knee is swollen, he has no difficulty in bending or extending the leg or thigh.

Examination: There is a mass in the interior aspect of the thigh, the upper limit of which is about three inches; below the anterior superior spine of the ileum, the mass extends downward about 4 inches, the course of the sartoris and rectus. The overlapping skin is not adherent to the mass. No ecchymosis is present. The mass is not painful, it does not fluctuate, nor does it pulsate. It is hard and apparently circumscribed. The obliteration of the lumen of the femoral does not alter the size nor the shape of the mass.

Operation. An incision about eight inches long was made the upper limit being about the level of the saphenous opening, the lower limit about two inches above the knee joint. When the skin was reflected, the sheath of the quadriceps seemed blue; when this was incised a large amount of organizing blood clot was seen, this blood clot was emptied out, after which we could see that the cavity from which it came was the ruptured belly of the rectus muscle. On further examination, we noticed that the ruptured edges of the rectus muscle belly contained a large number of irregularly shaped islands, which were hard and of a yellowish color.



TWO AND A HALF MONTHS AFTER EXCISION OF RECTUS FEMORIS MUSCLE.

A careful examination of the entire length of the muscle showed a similar condition to exist in almost the entire muscle. Dr. Lanford made a rush diagnosis and reported "Epithelial type of tumors." The muscle belly of the rectus was excised for a distance of ten or twelve inches. The sheaths of the vastus externus and internus and crureus were sutured together and a small rubber dam drain was placed

in the lower angle of the wound. The skin closed with silk worm gut sutures. Plain sterile dressings were used. Operation lasted one hour. June 9, 1917. Wound healed primary intention. He is able to completely extend leg on thigh. Flexion is good; weight bearing causes no pain.

June 18. Flexion and extension perfect. November 1, 1917, he attends his usual duties.

Dr. Lanford's report: "Microspical examination of sections from the rectus muscle shows marked degeneration changes. These changes are accompanied by reparative processes and replacement of the destroyed muscle by connective tissue. Here and there are noted areas of early bone formation."

DISLOCATION OF THE STERNAL END OF THE CLAVICLE (FORWARD.)

Case 4. Mr. C. R. On Wednesday, October 24, 1917, at about 4 or 4:30 in the afternoon he was jammed by a piece of machinery against a piece of iron. He was brought to Touro immediately. On examination I found the patient to have a feeble pulse, and apparently suffering great pain. Before removing his clothing a hypodermic of morphine 1-6 gr. was given, after which his shirt was cut off. Immediately I noticed marked prominence over the left portion of the sternum, prominence moved with the motion of the arm or shoulder on the left side. The prominence was the sternal end of the clavicle which was dislocated forward. There were several painful areas on the back, but examination revealed no evidence of fracture of the ribs or other injury. The dislocation of the clavicle was reduced, the following dressing applied:

1st. The first roll of Sayre's adhesive dressing, to increase the intraacromial distance.

2nd. A Stimson figure eight was next applied over shot bag placed over the sterno clavicular articulation.

3rd. A second and third roll of Dessault's were next applied to hold arm to chest wall to support the arm.

November 7. All dressings were removed. The functional result is perfect. There is still a slight deformity.

Dislocations of the clavicle are rare, particularly of the sternal end. This is the only case of this type which has come under my observation.

FRACTURE OF THE SURGICAL NECK OF THE HUMERUS.

Case 5. Sunday, four days ago, while attempting to catch a moving street car, he struck himself on the shoulder. Was treated by Dr. R. with ice bags, and the patient was comforted by the diagnosis "Sprain." He complains of pain, which is aggravated by lying on the injured side, pain in the shoulder and he is unable to raise his arm up.

Examination, May 24, 1917. The left arm from the axillary fold to within a short distance of the elbow shows a large ecchymotic area. The left arm is larger than the right. Measurements axillary fold 38 c. m. and the right 35 c. m. There is a limitation of abduction and he complains of pain, when pressure is made at the upper end of humerus. X-ray revealed impacted fracture of the surgical neck of humerus and fracture of the greater tuberosity. Under ether anesthesia the arm was abducted and externally rotated, after breaking up

the impaction the usual dressing, which consisted of the axillary triangle, plaster shoulder cap and light plaster cast including the elbow was applied. After regaining consciousness, following the anesthetic, he did not complain of pain nor discomfort. He left the hospital on May 25. On leaving the hospital he said he was perfectly comfortable. Dressing removed June 2, and Dessault bandage applied. Patient complained of so much pain that I reapplied the original type of dressing. Abduction June 3. This he wore until June 8. Dessault. Dressing changed June 11. No pain. June 15 all dressings removed, arm manipulated, raised to horizontal without pain. Special bandage applied. Binder applied June 18. Able to rotate shoulder—raise arm almost to horizontal. Put hand on opposite shoulder June 30. Dressing removed. No pain. Advised voluntary motion. Nov. 1. He has complete functional activity of shoulder and there is no deformity.

In addition to the clinical cases presented, a report was made on the use of dichloramine T. in cases presenting infection. It has been used on felons, palmar abscess, carbuncles and the like. The experience thus far gained with the use of it has been that the infection cleared up in much shorter time and they required less dressing than with any other method, it is irritating to the skin only in a mild type, when used alone, but *when used in connection with iodin, we have found it is irritating to the skin.* The dichloramine crystalizes at the bottom of the bottle as a result of the admixture with water. Dichloramine solutions in oil are stable, if not exposed to air and light.

The preparation of dichloramine requires the closest attention to the details as given out by Dakin and Dr. Paul Lewis. All utensils must be dry before starting, and if some difficulty is noted in getting it to dissolve in the chlorinated eucalyptol it may be heated to 60°.

Dichloramine T. in oil possesses advantages over the Dakin's solution, or neutral hydrochloride of soda, in that it is more stable, and requires less frequency of dressings and that infection clears up in shorter time.

SPLINTS.

Certain of the newer splints are being utilized in the treatment of fracture: there were demonstrated, Jones Elbow Splint, Grove's Modification of the Hodge's Splint and the Jones Abduction Frame. As a matter of record I wish to quote from a paper which I published in the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL in March, 1913, Vol. 65; the paper was read before the State Medical Society, April 24, 1912.

Mr. R. Was found one morning about 2 o'clock on the floor of his bedroom. He had no recollection of having gotten out of bed; all that

he realized was that efforts to move his leg was futile. I saw him two days after the accident and the examination revealed a typical deformity; the foot was everted and the leg shorter. I had him removed to Touro Infirmary, and under slight anesthesia, the leg was manipulated and a cast put on, with the thigh in abduction. He was returned to bed, and the head of the bed elevated. On account of an incontinence of urine and feces the cast became rapidly soiled and it was necessary to remove the cast. I then decided to have a double modified Thomas Ridlon splint made for him. A cross piece of steel connected the lower cuffs of the brace in such a manner, that any degree of abduction could be maintained. This proved to be very satisfactory. But in spite of every effort he died in three weeks.

This note is inserted as the abduction modification of the Thomas splint was utilized without knowledge of the Jones abduction frame, if in reality it was made use of by Colonel Jones.

The dichloramine T. which was used was sent to Dr. Matas, by the Surgeon General's office from the Phipp's Institute. Thanks are due to the Surgeon General's office, Dr. Paul Lewis and Dr. Matas for the material used. Special thanks are due to Dr. Paul Lewis for helpful directions in the preparation and use of dichloramine T.

THEORY OF THE GERM OF YELLOW FEVER.

By DR. EDWARD M. ALBERS, Galveston, Texas.

In justice to my father, Dr. Frederick Bernard Albers, of New Orleans, I wish to submit some extracts from records on file at the Louisiana State Board of Health and reports to the General Assembly which prove that he was the first in announcing the theory of germs or microbes being the cause of diseases, especially of yellow fever.

Dr. F. B. Albers communicated these reports in 1870, in his official capacity as Sanitary Officer of the Board of Health of the Second Municipal District of New Orleans, in which 399 deaths occurred that year out of a total in the entire city of 587.

Some of the most interesting and significant are the following:

“In every instance, when a case of yellow fever took place, the house where it occurred, also its immediate neighborhood, were disinfected, by setting free chlorine and sulphurous acid gas in the rooms where death had taken place. The gutters of the yard were sprinkled freely with copperas and carbolic acid, and the carbolo-hydrochloride of iron used as a permanent disinfectant about the sinks, privies and vaults. The

streets and gutters of that portion of the district where the disease prevailed were also disinfected, September 14, by distributing five barrels of lime throughout that particular locality, and following it up on the 15th by distributing two barrels of carbolic acid, containing 100 gallons, on the same ground. As this appeared to have the desired effect, and the quantity being barely sufficient to give the infected locality a small quantity all around, 200 gallons more were applied on the 19th, 200 on the 20th, and 200 on the 22nd. As it evidently checked the disease and arrested its progress, the disinfection by carbolic acid was repeated on the 24th, 26th and 27th. The duty was invariably performed at night, to enable the antiseptic properties of the carbolic acid to exert its full influence before the heat of the sun should evaporate it.

"Where thoroughly tried, it has certainly been very satisfactory, and, if properly brought into effect previous to the appearance of any disease, will probably prevent it entirely. I give the following instance as a proof of the value of the mode of disinfection practiced:

"No 230 Chartres street, a tenement-house, running through to Old Line street, containing thirty rooms, was occupied, when the fever made its appearance there, by thirty families, consisting of 183 persons, all natives of Italy. Of these, 44 took the fever, 14 died, 26 recovered, 4 taken to the hospital. Of the remaining 139 people that did not take the fever, 43 were here less than one year, 32 less than two years, 17 less than three years, 47 over three years. One hundred and thirty-nine people were unacclimated. After the process of fumigation and disinfection, only two more persons were taken sick.

"The contagiousness of the fever has been remarkable when no disinfection was resorted to, as, for instance, at the Louisiana Bakery, where, as men employed there were taken sick and left to go to their friends or to hospitals, new men were employed and put into the same beds and rooms that the others had vacated, and invariably became sick soon after. The same reckless disregard of all moral obligations and duties to others, and particularly to strangers, has furnished almost all the yellow fever patients of the Second District, which district supplies the hospital with fresh cases, derived invariably from the various boarding-houses, principally in the neighborhood of the levee, where the inmates had contracted the disease previously. These fresh cases of yellow fever were new-comers, put into the rooms and beds lately occupied by their sick predecessors.

"To illustrate the contagiousness of the fever, I can refer to several instances that came under my observation. There are three establishments uptown which are in close proximity to each other. One of them is a large corn-mill and the other two are bakeries. They employ a number of men of various nationalities, who sleep, and generally also board on the premises; they were all attacked by the fever about the first of October. The establishments were not disinfected, as the proprietors of them positively refused to have it done, and the fever continued to linger in these places and attack new-comers as they were employed to take the places of their predecessors who had been carried off with the fever, until the 22nd of November, when the last of them died, and the cold weather effectually put a stop to any further infection.

"Another instance also to my personal knowledge: it was that of a lady, uptown, who has some reputation as a 'doctress,' and took several gentlemen into her house to 'nurse' through the yellow fever. The first cases that occupied her rooms and beds yielded readily to treatment

and were soon convalescent. When they went away and their places were taken by others, although they presented the same mild type of the fever as the former ones when they arrived, they would soon assume a more severe type, and almost invariably proved fatal. And as no fumigation or disinfection was resorted to, it is, without doubt, to be attributed to the influence of the poison from the immediate surroundings to which they were exposed, in addition to that already existing in these sections.

"There were sixteen cases under treatment at the time I took charge of the Fourth District; nine more were taken subsequently, up to the 28th; the last one died on the 23rd. No more cases occurred up to the 4th of October, when I withdrew from the district, as the threatened epidemic had been prevented, and my presence was imperatively necessary in the Second District. When I took charge of the infected district the fever prevailed in that portion of it bounded by Chippewa, Magazine, Sixth and Third streets. It did not spread beyond these limits, owing to the energetic measures taken to prevent it. The means adopted to check the course of the yellow fever were an energetic, thorough and liberal distribution of carbolic acid over the entire vicinity of the infected district, extending its applications as far as the influence of the poison could have prevailed. In this way there were consumed, between Wednesday, the 13th, and Saturday, the 16th, 10,000 gallons of carbolic acid, and it may be said that the entire vicinity was soaked in it. It was freely applied to the filthy streets, unpaved yards, alleys, stagnant gutters and ditches by which all of the streets and many of the houses were surrounded, as well as to manure heaps, collections of refuse and other nuisances which abounded in that neighborhood. Carbolic acid was chosen for this purpose as being the best disinfectant known, as it coagulates all albumen, and is certain to destroy all the forms of life. It volatilizes easily and freely, and thus attacks the hidden germs of disease that float in the atmosphere.

"This process of disinfection was repeated daily, and the atmosphere became highly charged with the vapor of the acid, which found its way into the dwellings of the sick and healthy alike. Many persons fancied at first that the smell produced headache, but most of them soon became convinced of their error, and these persons who dislike the smell and complain of nausea when exposed to it would be similarly affected by any unusual smell, while they can bear patiently with the most loathsome smells because they are familiar with them.

"Notwithstanding this, it cannot be denied that the Sanitary Inspector engaged in its distribution was the most unpopular man in the neighborhood at the time, but the 'end justifies the means,' in this case at least, and the result has been that the disease was checked in its onward course and a malignant and widespread epidemic was prevented. Not a single case occurred beyond the limits where it was raging on the 13th. In the course of a month a few isolated cases made their appearance again, and continued to do so until frost, which coincides with the remark before made, that minute contagious particles will escape destruction, propagate again, and when in sufficient force make themselves felt. The importance, therefore, of continuing the application of disinfectants every three or four days during the season favorable to its development is evident. In no instance has a second case of fever occurred in any house where this course was carried out, but when it was objected to and persistently prohibited by heads of families, several members of the household took the fever in succession."

PROCEEDINGS OF THE AMERICAN SOCIETY OF TROPICAL MEDICINE

A CASE OF DESTRUCTIVE LEISHMANIOSIS.*

By DR. OCTAVE TORRES, Bahia.

(Translated for the JOURNAL by Dr. A. McShane, Greenwood, Miss.)

E. C., female, age 56, white, widow, native of Nazareth (State of Bahia), a resident of the City of Salvador for eleven months, and, for the previous thirty years, of the City of Amargosa, and belonging to the highest social class of this city.

On inspection she shows a complete loss of the nasal pyramid, and around it an ulceration with a yellow floor and covered with granulations, which gives the patient a cadaveric look.

She stated that her disease began with a swelling (we believe that it was edema) of the right side, and localized more or less in the malar region, following the direction of the lachrymal gland of the same side, lasting for about eight or ten days, and undergoing resolution without ulcerating.

After the edema subsided the place remained red, resembling the bite of an insect, for some time, though she cannot recall exactly how long. This localized redness disappeared without treatment at the end of two or three months without recurrence.

Some time after the swelling above referred to, she had inflammation inside the nose on the right side (where, she believes, that the lesion was localized in the sub-septum).

This second lesion healed up, though it never felt completely well, since she felt that the right nostril was somewhat obstructed, for she could not breathe freely through that side. She consulted Dr. Arthur Bastos, who examined her and made a diagnosis of lupus, and he advised her to consult a specialist in the capital (City of Salvador).

The patient lived in Bahia in November of 1904 (about twelve years ago), and consulted the local authorities in that line. The majority of the specialists made a diagnosis of syphilis, while one distinguished professor wavered between lupus and syphilis.

* Read by title before the American Society of Tropical Medicine, New York, June 5, 1917.

This distinguished clinician inclined towards lupus, and prescribed tonics, reconstructives, arsenic, cod liver oil, iodogenol, histogenol, etc.; but, inasmuch as this medication gave no results, he gave intramuscular injections of biniodide of mercury, enesol, etc., and even this did the patient no good.

We saw this patient in the clinic of Prof. Alexandre de Cerqueira in 1906 (that was our third year in the study of medicine), and at that time our illustrious teacher inclined to the diagnosis of lupus.

The patient's nose was then intact; only on the right side, corresponding to the free border of the nasal bone, there was some congestion, and the ulceration inside was not sufficient to cause any great inconvenience, and there was already obstruction of the septum and the lobule of the nose.

At the point above referred to the nasal bones were covered only by the skin, which was extremely thin.

In the following year, 1907, the ulceration appeared externally; the patient said that "the sore inside passed to the outside."

The lesion was never painful, not even itching, and it did not incommode the patient, except for the slight embarrassment in breathing.

The weak skin that protected the internal ulceration, as above stated, sloughed away and opened out, thus initiating a martyrdom for that poor woman to wear a black veil or to live henceforth with a handkerchief carried in the hand and held in front of the face in order to hide the terrible lesion from persons who came near her.

The ulceration (perforation) of the skin at the free border of the right nasal bone continued progressively to descend until it reached the middle part of the nasal pyramid, destroying the entire lobule of the nose, then passing to the left side, leaving only a small portion, a strip of skin three or four millimeters long, which was all that remained of the left nostril, attached to a small part of the lobule (cutaneous portion of the lobule of the nose), which was there united by a small piece of skin, exclusively composed of the sub-septum.

Above, the destruction later involved both nasal bones, the entire nasal pyramid being thus destroyed.

Being consulted in 1907, the illustrious master, Prof. Alexandre de Cerqueira, who had seen her before, ordered a continuance of the same internal medication (cod liver oil, histogenol, etc.), and

he caused her to be treated in the office of roentgenotherapy of the Faculty of Medicine of Bahia, at that time under the direction of the unfortunate and unforgettable master, Dr. Alfredo Britto. She not only received applications of X-rays, but also the galvanocautery and the Finsen lamp.

We learned the above facts from the patient and from Dr. Vieira Lima, the worthy assistant in clinical medicine, who applied the X-rays and the phototherapy (Finsen light).

She had never suffered from any serious disease. Prior to her present illness she said she had only suffered occasionally from eczema in various regions, principally in the large flexures, lasting from eight to fifteen days, and never appearing twice in the same region. It first appeared on the neck, then in the axilla, the popliteal region, at the bend of the elbows, under the breasts, etc.

This eczema consisted of small vesicles, which burst and gave issue to a liquid, which dried up, and the lesion disappeared without leaving any traces.

She never had an injury, which is a point to which we call attention; she presented no scar, outside of a small one, situated on the left border of the lower jaw, resulting from a thorn which pierced her at the tender age of three years, and which was removed and treated by the family physician. She learned this from her mother.

She had smallpox at the age of six years, and measles at the age of eighteen.

In 1909, while under treatment here in Bahia, she contracted malaria, for which she was treated by our illustrious colleague, Dr. Joao Pondé.

She married when she was twenty-odd years old. She had nine children, and one abortion at three months; this latter, occurring between the fourth and fifth parturitions, was attributed to a fright. Of the nine children, eight are living and in good health; one died of diarrhea at the age of three months.

She always enjoyed good health; she was strong, stout, and accustomed to domestic work. She never suffered from headache.

When at college, in Nazareth, she bled from the nose; however, after the patient began to suffer from her present malady, epistaxis never occurred. She remembers that, a short time before her present disease, she had a copious discharge from the nose (coryza), which passed off at the end of one or two months, discharging, however, many crusts and some liquid transudate.

Before getting the inflammation of the right nostril, and a short time after the coryza above referred to, the nose felt dry, and, when she washed her nose, crusts came out, principally from the right nostril.

Her husband was never a strong man, but neither was he an invalid. He had many scrofulous scars on his neck, when he was young and unmarried. He suffered much from migraine; he had a dry pleurisy many years ago; at times he felt pains, not very severe, in his joints, and which passed off without treatment. He died four years ago, of arteriosclerosis, at the age of fifty years.

The treatment of our patient's affection consisted at first of tonics and reconstitutives, when we thought we were dealing with a case of lupus. However, when her medical attendants observed that the lesions did not yield to treatment, they employed intramuscular injections of biniodide of mercury, enesol, etc., making injections alternately, as above mentioned, and the treatment with X-rays, phototherapy, galvano-cauterization, etc., without the slightest benefit, as this lesion continued to extend.

In the interior city where she lived she never abandoned the anti-syphilitic treatment prescribed by her medical attendant.

After having thus exhausted all that medical science could offer in the capital (Salvador) and other cities of the interior, she commenced, in her despair, to use medicines advertised in the daily press: Noqueria's elixir, sarsaparilla, Dr. Humphrey's pills, etc., and homeopathy.

Such is the history of the patient.

We have known this lady from our student days. After we had treated several cases of leishmaniosis we learned that most of the patients came from the zone in which our present patient lived, and we then communicated with the family, and tried to induce the patient to come to Bahia for treatment, for we believed that this was a veritable case of leishmaniosis. We succeeded in this, and when the lady came to our hospital we examined about twenty smears from the nasal lesion. We finally found, after many examinations, a few scattered Leishman bodies in our specimen.

Even after our delayed clinical examination we believed it was a case of benign lupus, but this was not our first judgment and that of all of the colleagues who saw her on that occasion.

The feature that caused us to hesitate was the period of evolution, which we found very long.

Before finding the Leishman bodies we initiated the treatment with tartar emetic, beginning with small injections of 0.05 gram, on the ground that, if it did no good, it could not do any harm.

The lesion at this time extended on the face in the region of the nose, as far as the neighboring malar regions, right and left, measuring about eight centimeters from side to side, and vertically it extended from the anterior nasal spine below to the interciliary region above.

There was edema around the lesion, and marked hyperemia.

The ulcerated surface had an intensely red color, completely covered with very fine, sand-like granulations, giving off little liquid of a slightly purulent character, at the outer portion. The borders were elevated, well defined, and measured about a millimeter and a half in height.

The inner surface of the lesion was greatly congested, and suppurated freely; there was also an abundant formation of crusts.

This was the condition of the patient when she consulted us before treatment.

When she had improved somewhat she allowed other physicians to examine her. Dr. Eduardo de Moraes examined her nose, ears and eyes on February 1, 1916, at which time the patient had received eighteen injections of tartar emetic.

Dr. de Moraes made the following report on the case:

"In the middle of the face there is an elliptical orifice five centimeters in height and three in width at its widest part, corresponding to the former nasal pyramid, which has been almost entirely destroyed, since there remains only a fragment of the nasal lobule attached to the upper lip, and, on the left side, a small remnant of the cutaneous investment of the wing of the nose. This last piece, adhering to or uniting with the remains of the lobule, aids in forming an orifice which corresponds to the former extremely atresic left nostril.

"On drawing aside the nasal lobule we find the dental arch of the superior maxilla exposed to view, in the space extending from the right canine to its fellow of the opposite side, the roots of which are visible (she has already lost one canine). The incisors are lost.

"The palatine process of the superior maxillary bone presents an oval orifice corresponding to a destroyed portion of bone, and involves about two-thirds of the extent of the process, even being detached from the palate bone. This opening is plainly visible through the mouth, and can be closed by forcing the tongue up into it. There is nothing more to report about the nose, unless it be the inflammation and some crusts formed there.

"There is total destruction of the nasal septum up to the roof of the nose (now converted into one big cavity). The *lamina papyracea* of the ethmoid is covered with soft tissue. The lateral walls of the nose present complete destruction of the inferior turbinalis of the lower

ends of the lachrymo-nasal canals, anteriorly, and the mouths of the Eustachian tubes posteriorly.

"The middle turbinals are preserved; the middle meatus, the infundibular region, and *ostium maxillara* are distinct on both sides.

"The posterior wall of the naso-pharynx appears inflamed and covered with crusts, the lesions extending on the posterior wall of the mid-pharynx, and from the lower pharynx to the vestibule of the larynx, where we find the epiglottis intact, and the arytenoid mucosa inflamed.

"There is also a slight ectropion of the right lower eyelid, in the region corresponding to the inner canthus of the eye, with twisting of the lachrymal orifice following cicatrization of an old lesion which existed there. Lachrymation and chronic catarrh of the conjunctiva, lesions of keratitis, most marked in the left eye, where they occupy a sector more or less triangular in form, corresponding to the oblique meridian of the cornea in an infero-external direction. Besides this, there is a central zone corresponding to the pupillary orifice.

"Ears.—Partial deafness. The drum-membranes are retracted; the light reflex is obscure; the end of the malleus is prominent. Externally, the lesions extending to the malar and gingival regions, are now cicatrizing.

"We note the following fact: the patient never lost her sense of smell; she easily perceives bad odors as well as good ones."

This was the state of the lesions on February 1, almost three months after the beginning of the treatment. This was initiated without the hope of cure, and solely for the purpose of ascertaining the action of tartar emetic in lupus, and we were amazed at the improvement in the patient. We noticed, after the tenth or eleventh injection, at the places where pieces of tissue were removed, that there was frank cicatrization. We invited Dr. Fernand Luz to see the patient. He had seen the patient before the treatment was begun, and he now confirmed our observation, that the lesion was clearly already cicatrizing.

In order to aid the general treatment by tartar emetic, we applied to the ulcer a solution of tartar emetic (1 to 1000) in physiological salt solution with a few drops of adrenalin; we douched out the nasal cavity with the same solution twice a day, morning and night.

We did not try the Wassermann reaction for reasons already given, and the test was not necessary in order to exclude syphilis, since the antecedents of the patient and the inefficacy of the intensive mixed treatment showed the absence of syphilis.

The derma reaction with tuberculin was negative.

It appears to us that in this case there was at first no lesion of the skin, unless we consider as such the small cicatrix situated above the right lachrymal gland, probably in the place where the patient claimed to have had the inflammation before remaining

sick, which brought about the ectropion of the right lower eyelid, as we saw above, and also the lesion of the sub-septum.

We attribute the extension and destruction of the bones (which is the first case of leishmaniosis in which we have had occasion to observe destruction of bones) to the various intemperate treatments which she has undergone. The destruction was probably due to the constant irritation produced by the applications of X-rays, Finsen light, galvano-cauterization, etc., which caused intense congestion of the ulcerated surface for two or three days, and small hemorrhages in the places where the applications had been made.

The patient cannot tell us how the bones were destroyed; she assured us, however, that no fragments of dead bone were ever removed, so that the destruction must have been an insensible erosion.

It appears to us that the process of destruction in this case was one of bony rarefaction, since we had occasion to observe, before the process was checked by treatment, that dead bone was not found anywhere, even in those places where the destructive process took place; the bones were always covered by the fine granulation tissue of the lesion.

We feel that we are justified in using the name of destructive leishmaniosis in this case, and we do not know if any one has ever applied this qualificative to any similar process.

We gave forty intravenous injections of tartar emetic, from 0.05 to 0.10 gram; we did not give any higher doses, because signs of intolerance appeared, and on account of the age of the patient.

The injections were given as follows: November 22, 1915, 0.05 gram; 26th, 0.06; 29th of November and December 3 and 6, 0.05 gram each day; 13th, 0.08; 7th, 0.06; 20th, 0.05; 24th, 0.06 (she felt slight muscular pains); December 29th and January 7th and 10th, 1916, 0.05 each day; 14th, 0.04; 17th, 21st and 24th, 0.05; 28th and 31st and February 4, 0.06 each; 7th, 11th, 14th, 18th, 21st and 25th, 0.05; 28th, 0.06; March 3d, 0.05; 10th, 0.07; 13th, 0.06; 17th, 0.08; 20th, 0.10; 24th, 0.08; April 3d, 0.07; 5th, 0.06; 24th and May 1st, 0.05 gram each day; May 19th, 0.06; 22nd and 26th, 0.08 gram of tartar emetic each day.

The patient complained of rheumatoid pains after the injections of November 24, 1915, of January 10 and 17, 1916; after that of April 8, 1916, she was confined to her bed for several days with influenza. On May 2 we suspended the injections in order to pre-

vent an accumulation of the substance in the organism, and at the end of May we pronounced her cured.

In all, the injections amounted to two grams and forty centigrams of tartar emetic.



Cicatrization was complete; a rosy epithelial investment covered the entire ulcerated part of the nasal and pharyngeal cavities. In the malar and gingival regions there was the formation of new skin and retractile tissue inside the nose, as is shown in the photograph taken after the treatment ended.

We could not secure a photograph before treatment, because the patient would not consent to it. From the time the lesion began to destroy the nasal pyramid, she covered it always with a black cloth, and later with a strip of linen, so that no one could see it; and she never had courage enough to look at herself in the mirror.

At the end of the treatment I suggested a plastic operation to reconstruct the nose, but the patient would not permit it, and she contented herself with wearing a false nose.

COMMUNICATIONS.

REPORTING OF ACCIDENTS FROM LOCAL ANESTHETICS.

Editors NEW ORLEANS MEDICAL AND SURGICAL JOURNAL:

The Committee on Therapeutic Research of the Council on Pharmacy and Chemistry of the American Medical Association has undertaken a study of the accidents following the clinical use of local anesthetics, especially those following ordinary therapeutic doses. It is hoped that this study may lead to a better understanding of the cause of such accidents, and consequently to methods of avoiding them, or, at least, of treating them successfully when they occur.

It is becoming apparent that several of the local anesthetics, if not all of those in general use, are prone to cause death or symptoms of severe poisoning in a small percentage of those cases in which the dose used has been hitherto considered quite safe.

The infrequent occurrence of these accidents and their production by relatively small doses point to a peculiar hypersensitiveness on the part of those in whom the accidents occur. The data necessary for a study of these accidents are at present wholly insufficient, especially since the symptoms described in most of the cases are quite different from those commonly observed in animals even after the administration of toxic, but not fatal, doses.

Such accidents are seldom reported in detail in the medical literature, partly because physicians and dentists fear that they may be held to blame should they report them, partly, perhaps, because they have failed to appreciate the importance of the matter from the standpoint of the protection of the public.

It is evident that a broader view should prevail, and that physicians should be informed regarding the condition under which such accidents occur in order that they may be avoided. It is also evident that the best protection against such unjust accusations, and the best means of preventing such accidents, consist in the publication of careful detailed records when they have occurred, with the attending circumstances. These should be reported in the medical or dental journals when possible, but when, for any reason, this seems undesirable, a confidential report may be filed with Dr. R. A. Hatcher, 414 East Twenty-sixth street, New York City, who has been appointed by the committee to collect this information.

If desired, such reports will be considered strictly confidential, so far as the name of the patient and that of the medical attendant

are concerned, and such information will be used solely as a means of studying the problem of toxicity of this class of agents, unless permission is given to use the name.

All available facts, both public and private, should be included in these reports, but the following data are especially to be desired in those cases in which more detailed reports cannot be made:

The age, sex and general history of the patient should be given in as great detail as possible. The state of the nervous system appears to be of especial importance. The dosage employed should be stated as accurately as possible; also the concentration of the solution employed, the site of the injection (whether intramuscular, perineural or strictly subcutaneous), and whether applied to the mouth, nose or other part of the body. The possibility of an injection having been made into a small vein during intramuscular injection or into the gums should be considered. In such cases, the action begins almost at once—that is, within a few seconds.

The previous condition of the heart and respiration should be reported if possible; and, of course, the effects of the drug on the heart and respiration, as well as the duration of the symptoms, should be recorded. If antidotes are employed, their nature and dosage should be stated, together with the character and time of appearance of the effects induced by the antidotes. It is important to state whether antidotes were administered orally, or by subcutaneous, intramuscular or intravenous injection, and the concentration in which antidotes were used.

While such detailed information, together with any other available data, are desirable, it is not to be understood that the inability to supply such details should prevent the publication of reports of poisoning, however meager the data, so long as accuracy is observed.

The committee urges on all anesthetists, surgeons, physicians and dentists the making of such reports as a public duty; it asks that they read this appeal with especial attention to the character of observation desired.

TORALD SOLLMAN, *Chairman,*

R. A. HATCHER, *Special Referee,*

*Therapeutic Research Committee of the Council on Pharmacy
and Chemistry of the American Medical Association.*

TREATMENT OF BAURRI ULCER.

VILLA AMERICANA,

Estado do Sao Paulo, Brazil, S. A., Dec. 6, 1917.

Editors NEW ORLEANS MEDICAL AND SURGICAL JOURNAL:

Sirs—For some time, have been noticing discussions and treat-

ment by various distinguished colleagues of Baurri ulcer, or Leishmaniosis Brazilensis. It is one of the most debated, simple subjects I know of, and one of the most widely scattered diseases. You will find it all along the Gulf States in the United States, down to Argentina, and is simple, yet difficult to cure.

If you will permit me, I will give you a specific, not to take weeks or months to cure, but just a few days. There is no need of deformity or the evil effects of tartar emetic, etc.

Noticing here, where I have been over a quarter of a century, that the native treats his sore with the open method and exposes it to the bright midday sun, with good results, and going on the fact that it is a "bug," I experimented with a lens, double convex, concentrating the sun's rays on the ulcer, carefully burning every part thoroughly until the smoke rose. To my great surprise and delight, the watery secretion ceased immediately and the ulcer healed in one week. Now, I have used this method several years without a single failure, and I challenge the Baurri ulcer that will not heal by this method in just a few weeks at most. It depends upon how long it takes healthy granulations to fill up the destroyed parts.

I have told this before, but it is too simple, I suppose to be tried. Burn the place or places twice a week until all the "bugs" that might be hiding under indurated tissues are killed.

Perhaps the profession does not know that most of these old "set-fast" leg sores are caused from this same insect, called here "Barbeiro." You have it all over the South, and you call it the "blood-sucker" or flying bed-bug. Perhaps they do know it, and I am not aware of same. But one thing I do know is that if the profession will try my remedy it will not use any other. The natives here are very superstitious, and they believe that I bring some medicine from on high to cure the ulcers, and do not give the sun's rays credit for the miracle.

Excuse presumption; were it not that I know countless thousands now and in the future will be benefited, would not intrude where so many distinguished and learned brothers have the floor.

Respectfully,

CICERO JONES.

P. S.—Radium and X-rays also destroy the parasite, but not so perfectly as the sun's rays or so cheaply. An old man's eye-glasses may be used. I have often used them.

C. J.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

Edited by DR. L. R. DE BUYS, Secretary-Treasurer.

OUR BOYS IN SERVICE.

By a recent action of the Executive Committee of the Louisiana State Medical Society a resolution was passed whereby due recognition is given to those of its members who are in the service of the United States Government. This resolution provides that those members of the Society who are in active service and not in pursuit of their personal and private medical affairs are continued as members of the State Society without the payment of the annual dues. This action is the least recognition which could be given to those who have already made great personal sacrifices in order to attain the end to which our great National Government is striving for the benefit of the entire world and for us as individuals.

The resolution is as follows:

“That it is the sense of the Executive Committee, this day assembled, that the dues be remitted of those of the members of the Louisiana State Medical Society who are in active, continuous military service of the United States Government and who are not in pursuit of their private and personal medical affairs.”

The office of the Secretary-Treasurer is dependent upon the Parish Societies for the names of their members who are in service, and in the parishes where no local Society exists the information will be gratefully received from any member.

If dues have already been received by the State Society for any member who should be exempted from their payment they will be refunded. Information from the parish should, therefore, be promptly submitted to the office of the Secretary-Treasurer.

PARISH SOCIETIES SLOW TO REPORT.

There is an unusual apathy on the part of the Parish Societies in making their annual reports. This is especially unfortunate this year, as more concerted action will be required to keep the organization as strong financially as heretofore. Every member should, therefore, consider himself a committee of one on membership to help round-up all the old members and to secure as many

new ones as possible. There should be as many new members added as there are members in service to make the individual membership as valuable as last year. There are several times as many more eligible physicians in the State as members in service, so that if each individual member will do his part he will not only be assisting the Society in maintaining its strength and increasing its membership, but will be contributing to making the State Society more valuable to himself and to the members in service during their absence and upon their return.

NEWS AND COMMENT

ORLEANS PARISH MEDICAL SOCIETY.—The annual meeting of the Orleans Parish Medical Society was held at the domicile of the Society, 141 Elk Place, New Orleans, on Monday, January 8, 1918, at 8 p. m. The retiring officers and chairmen of standing committees read annual reports, after which the following officers were installed: Dr. Paul J. Gelpi, president; Dr. Frank J. Chalaron, first vice-president; Dr. Hector E. Bernadas, second vice-president; Dr. E. W. Mahler, third vice-president; Dr. Paul T. Talbot, secretary; Dr. Henry W. E. Walther, treasurer; Dr. H. E. Nelson, librarian; Drs. F. R. Gomilla, W. H. Knolle and J. W. Newman, additional members board of directors. The annual oration was delivered by Mr. William McL. Fayssoux, and Mr. Lynn R. Dinkins and Dr. Paul H. Saunders spoke on "War Savings Stamps." The Service Flag of the Orleans Parish Medical Society, containing fifty-six stars, was presented on behalf of the members by Dr. John Callan, assisted by Troop No. 12, Boy Scouts of America, under the leadership of Troopmaster Lewis R. Graham, while the whole assemblage joined in the inspiring strains of "The Star-Spangled Banner" and "America." The musical program was under the direction of Dr. Homer Dupuy. Refreshments were served with compliments of the retiring board.

AMERICAN RED CROSS OPENS FRENCH TUBERCULOSIS HOSPITAL.—On Christmas day the first tuberculosis hospital in France was opened in Paris by the American Red Cross. This hospital has been named the Edward L. Trudeau Tuberculosis Sanatorium, and consists at present of only eight beds, but it is hoped to increase the number to 1,200 within the next year. Dr. James L. Gamble, Baltimore, with a staff of Red Cross nurses, is in charge.

MANUFACTURE OF VERONAL AND NOVOCAIN IN THE UNITED STATES.—The Federal Trade Commission has granted to the Abbott, the Rector Chemical and the Farbwerke Hoechst companies licenses to manufacture and sell the preparations heretofore known as veronal and novocain, hitherto controlled by enemy aliens under American patents. The alien property custodians are to receive 5 per cent of the gross receipts.

CONFERENCE OF COUNCIL ON MEDICAL EDUCATION.—The fourteenth annual conference of the Council on Medical Education will be held at the Congress Hotel, Chicago, February 4, 1918. The morning program will be devoted to medical education, and the afternoon session, held jointly with the Federation of State Medical Boards of the United States, will deal with the general topic of medical licensure. On February 5 separate meetings will be held by the Federation of State Medical Boards of the United States and the Association of American Medical Colleges.

ENDOWMENT FOR EUGENIC RECORDS.—The Carnegie Institute recently received from Mrs. E. H. Harriman a donation of \$500,000, an office building, a residence and eighty acres of land at Cold Springs Harbor, L. I., to carry on the work of the eugenic records which was begun about five years ago. The institution employs about 100 persons to carry on its researches.

A MERGER OF OPHTHALMIC JOURNALS.—Beginning with January, 1918, there will be published a new monthly ophthalmic journal called the *American Journal of Ophthalmology*, merging the *American Journal of Ophthalmology*, the *Annals of Ophthalmology*, the *Ophthalmic Record*, *Ophthalmology*, the *Ophthalmic Year-Book*, *Ophthalmic Literature*, and the *Anales de Oftalmologia*.

DR. RAMON GUITERAS BEQUEATHED \$10,000 to the Columbus Hospital, \$5,000 to the New York Academy of Medicine, and \$5,000 to the Post-Graduate Hospital.

MUNITION WORKS TO PROVIDE HOSPITALS.—Recommendations were formulated by the sub-committee on industrial diseases, poisons and explosives, for presentation to the Council on National Defense, requiring all munition plants in the United States to establish hospitals under the care of a competent physician and to provide restaurants where the employees may eat without danger of being poisoned by substances used in the manufacture of munitions.

"MEDICAL INCOMPETENTS" TO BE WEEDED OUT.—Under date of December 21, a special announcement from the Surgeon General's office states that, as a result of the unsuitable conditions found in

some of the army camps, steps will be taken to eliminate from the service all officers not fully qualified to perform their duties because of mental and physical incapacity, bad habits or laziness. Those who cannot perform their duties because of unsuitable previous training will be transferred and tried in other positions. If then unable to do satisfactory work, they will be reported to the Surgeon General as unfit and sent before a board with a view to their discharge from service.

SCARLET FEVER SERUM DISCOVERED.—The Swedish Medical Society recently received the announcement from Dr. Carl Klin, a bacteriologist and an assistant physician in charge of the Stockholm contagious hospital, of the discovery of a serum for scarlet fever. He said that the serum had reduced the mortality in the severest cases to $17 \frac{3}{5}$ per cent, against more than 70 per cent in equally severe cases which were not treated with the serum.

TO ASK APPROPRIATION FOR HOSPITAL.—At the next session of the Mississippi Legislature a request will be made for an appropriation of \$25,000 to build a new hospital at the Beauvoir Soldiers' Home, to take the place of the old building now in use.

LOYOLA UNIVERSITY UNIT.—Dr. Joseph A. Danna has been chosen to head the Loyola University Hospital Unit to Italy. According to report, this unit has been made possible by the generous gift of Mrs. John Dibert, Miss Mae Schmidt and Mrs. Oscar Putman, of New Orleans. The personnel of the hospital will consist of two hundred or more Italian-English-speaking persons mainly, twenty-six of which must be physicians and sixty-five nurses. The chief nurse and seven head nurses will be chosen from the Sisters of Charity. The work of organization of the unit will be pushed, with the idea of its completion as soon as possible. The hospital will be made up of 500 beds.

THE *Pacific Medical Journal* CONSOLIDATES.—The *Pacific Medical Journal*, the oldest medical journal on the Pacific Coast, which has just completed its sixtieth volume, has been acquired by Dr. William J. Robinson and will be consolidated with the *American Journal of Urology and Sexology*. The combined journal will continue under the editorship of Dr. Robinson and will be published from 12 Mt. Morris Park, West, New York City.

LOUISIANA STATE BOARD OF MEDICAL EXAMINERS.—The last meeting of this Board was held in New Orleans, December 6, 7 and 8, 1917, and reorganized, the following members being elected: Dr. L. J. Menville, president; Dr. T. E. Wright, vice-president, and

Dr. E. W. Mahler, secretary-treasurer. Dr. J. G. Martin, the former president, tendered his resignation to enter the army.

Out of eighteen physicians examined, nine passed and were granted certificates. Application of four physicians for reciprocity were approved and certificates granted. Six out of nine midwives passed the examination and received certificates. One application for chiropody certificate was approve and granted.

The successful physicians were. Drs. F. T. Beautrous, C. W. Duval, T. L. Eyerly, C. R. Haley, L. A. LeDoux, T. R. McCarley, S. H. Nothacker, W. O. Schutzmann and D. N. Silverman.

Those granted certificates for reciprocity were: Dr. M. S. Lombard, of Nebraska; Drs. J. H. McCaa and P. L. Perot, of Arkansas, and Dr. J. W. Moore, of Michigan.

Alabama was added to the list of States with which Louisiana reciprocates, making thirty-three in number. The next meeting of the Board will be held in New Orleans, June, 1918.

ST. TAMMANY PARISH MEDICAL SOCIETY ELECTS.—The annual meeting of the St. Tammany Medical Society was held in Mandeville, La., January 9, 1918, and elected the following officers for the ensuing year: President, Dr. W. E. VanZant; vice-president, Dr. R. B. Paine; secretary and treasurer, Dr. A. G. Maylie; delegate to the Louisiana State Medical Society meeting, Dr. A. G. Maylie; alternate, Dr. J. F. Polk. The next regular monthly meeting will be held at Mandeville, February 13, 1918.

REPORT OF NEW ORLEANS DISPENSARY.—The regular meeting of the New Orleans Hospital and Dispensary for Women and Children was held on January 8 and reported a deficit of \$33, which was caused by the increase in price of all necessities owing to war conditions. The patients treated in the clinic numbered 562; in hospital, 45; operations, 30; no deaths. Donations from various sources during December were acknowledged and a request made that donations be increased in order that expenses may be met.

ANNIVERSARY OF THE NEW ORLEANS PRESBYTERIAN HOSPITAL.—The ninth anniversary of the New Orleans Presbyterian Hospital was held in the Corinne Casanas Clinic on January 14, 1918. This hospital was founded nine years ago on contributions of three \$5 bills and gradually grew into its present flourishing condition. Two years ago the Corinne Casanas Free Clinic for the Poor was added to the hospital, which was made possible by the gift of \$20,000, which represented the savings of Miss Casanas. Hundreds of pieces of linen and \$300 were presented by the friends of the institution.

The graduation exercises of the 1918 class of trained nurses marked the occasion of the anniversary celebration. The members of the class are: Misses Ernestine Rebecca Waters, Lessie Viola Kelley, Imogene Rolfe, Alice Carey Sampley, Ethel Deo Fullington and Maude Buttner.

REMOVALS.—Dr. M. A. Fort, from Grand Bay, Ala., to Manila, P. I.; Dr. Frederick Gaertner, from 4929 Penn avenue to 222 N. Negley avenue, Pittsburg, Pa.; Lieut. A. W. Williams, M. C., from Manila, P. I., to Hospital Train No. 29, Fort Benjamin Harrison, Indiana.

BOOK REVIEWS AND NOTICES

International Clinics. A quarterly. Vol. I and II. Twenty-seventh series, 1917. J. B. Lippincott Co., Philadelphia. Edited by H. R. M. Landis, M. D.; Chas. H. Mayer, M. D.; Sir Wm. Osler, Bart., M. D. F. R. S.; Rupert Blue, Frank Billings, M. D.; John G. Clark, M. D.; A. McPhedran, M. D.; James J. Walsh, M. D.; J. W. Ballentine, M. D.; Charles Greene Cumston, M. D., and Richard Kretz, M. D.

It is, of course, understood in a work of this character that the subject, for the most part, is treated from the viewpoint of the lecturer and teacher, and seldom, if ever, assumes the nature of an exhaustive or encyclopedic treatise.

The contributors in this, and in Volume II of the same series, are men who have earned the right to a respectful hearing.

Dr. B. B. Vincent Lyon writes on the medical treatment of gastric and duodenal ulcer. While he does not present anything new to the close student of the subject, he has made good use of his material in the thirty-seven pages of his article.

Dr. Russell H. Boggs, Röntgenologist of the Allegheny General Hospital, writes on the treatment of epithelioma by radium. He says: "Radium and the X-ray, I believe, should always be considered first in treatment of epithelioma, because, when properly applied, practically all epitheliomatous tissue can be made to disappear, and there are fewer recurrences than by any other method. It is a perfectly legitimate method of treatment in proper hands, but is a method liable to abuse if it is not restricted to its proper field." The sixteen plates illustrating his article are well done.

Dr. Curran Pope, in his article on the "Medical Treatment of Poliomyelitis," regrets that the attitude of the profession from a medical standpoint is one of extreme pessimism and that this pessimism extends even to the future therapy of the disease, including the value of vaccine, serum, etc. He is hopeful that, by the use of a non-specific protein substance, the influence of the filterable protein of the disease can be overcome.

The article, "Syphilis as an Etiological Factor in Laennec's Atrophic Cirrhosis of the Liver," by Douglas Symmers, is entitled to close perusal.

In concluding he says: First, that alcohol plays a secondary rôle in the etiology of atrophic cirrhosis of the liver; second, that there is a group of atrophic cirrheses of the liver of the type described by Laennec, in which syphilis is the primary etiological factor, and alcohol, if it enters into the process at all, is contributory and not essential.

Dr. Max Askanazy, of Geneva, writes on his "Personal Researches on the Nature of Chloromata"; Dr. P. G. Skillern, Jr., on "Aneurismal Obstruction of Vena Cava Superior, with Special Reference to the Canal Syndrome"; Dr. F. Parker Weber on "Some Adenomatous Tumors of the Abdominal Viscera"; Dr. Albert Abrams contributes an interesting article on his own conception of "The Electronic Reactions"; Dr. Frederick Gardner makes a contribution of his own two cases of "Acne Necrotica"; "The Tangled Skein," a memorandum on neglected Psychopathics, is by Dr. J. Madison Taylor; "A Study in Superstition" is by J. P. H. Murphy; "Health Efficiency of Workers Due to Their Living Conditions" is from the pen of Dr. H. R. M. Landis, of the Henry Phipps Institute, of Philadelphia; "The Treatment of Dislocations and Fractures of the Outer End of the Clavicle" is by Dr. F. M. Cadenat, one time intern of the Paris hospitals, now professor of anatomy of the Faculty of Paris; "Local Anesthesia in Surgery of the Colon and Rectum" is by Dr. William M. Beach; Dr. William Barnett Owen writes on "Congenital Talipes Equinovarus," with respect to a case of bilateral symmetrical talipes in twins; Drs. Frank A. Craig and John Speese close this very interesting volume with a report on the "Progress of Medicine During the Year 1916."

Volume II of this series opens with a clinic by Dr. Henry A. Christian on "Gout and Infectious Arthritis"; it is well illustrated. "Typhoid Fever, with Complications," is from the pen of Dr. Lewellys F. Barker. Dr. Thomas McCrae presents a diagnostic clinic on "Jaundice (Primary Carcinoma of the Gall-Bladder)". Dr. James J. Walsh contributes an article on "Constipation and Natural Food." He calls attention to the evil of self-medication, particularly with the newest of the line mineral oil for lubrication. Dr. Edward Martin presents "Fractures Clinic," and Dr. Barton Cooke Hirst "A Clinical Conference with the Graduating Class in Medicine of the University of Pennsylvania." Dr. Brooke M. Auspach writes on "Inflammatory Diseases of the Pelvis." "New Ear Tests in Medical and Surgical Diagnosis," by Dr. I. H. Jones, forms a chapter of special interest. He says: "For the new tests of the internal ear, we are indebted to the Vienna group of otologists, notably Robert Barany, who received the Noble Prize of 1915 for this work. This was the first world-wide recognition of the great clinical importance of these studies of the internal ear." This article is illustrated, showing by means of moving pictures how the tests are performed. Dr. Carey Eggleston reviews "Intravenous Medication from 1683 to the Time Ehrlich introduced Salvarsan." In his article on "The Treatment of Syphilis, Dr. Richard L. Sutton makes mention of the work of Schamberg, Kolmer and Raiziss, who hold that mercury is least irritating to the renal epithelium when administered by the inunction method. The now well-known experiments of Wile and Elliot, tending to prove that mercury when smeared on the skin is absorbed by vaporization, are mentioned. The assertion that mercurialized serum is seldom, if ever, now recommended by experienced syphilologists might bring forth objection in some quarters. The author states that, in an analysis of 225 cases, Craig found that, judging from repeated serum tests, the best results

followed intramuscular injections of old salvarsan. At this time, judging from clinical and serological experience which covers over 12,000 injections, the author draws conclusions which the reviewer can strongly endorse. He has only this comment to make, that, in his own experience with this method, although using the best technic, the patients very often complain of the severe pain following the injection, and sometimes object strenuously to this form of medication.

Dr. T. D. Crothers has an article on "Spirit and Drug Addictions." Dr. Smith Ely Jelliffe writes on the "Treatment of the Schizophrenic Patient"; "Medicine and Psychology" is the title of a short article by Daniel M. Hoyt; "Malta or Mediterranean Fever" is by Dr. Jules Bancillon, of Alais, France; Dr. William R. P. Emerson presents a group study of the result of one hundred physical and mental examinations of so-called well children; "Removal of Molluscum Contagiosum by Means of a New, Simple, Painless Method," is by Dr. M. L. Heidingsfeld; Dr. Alfred Heineberg writes of "The Diagnostic Significance of Uterine Immobility"; "Primary Ovarian Gestation" is by Dr. Simrall Anderson; "The Cause, Significance and Effect of Heterophorias on the General System" is contributed by Dr. Joseph E. Willetts; "A Surgical Clinic" is by Drs. John Speese and P. G. Skillern, Jr.; Dr. George G. Ross makes a "Report of a Burn Treated by Paraffin Protective Dressing"; "Skin-Grafting," by Arthur M. Shipley, is a readable and well illustrated article; "A Report of Three Cases of Brain Surgery," by Dr. Cecil E. Reynolds, is given in detail, and the pictures accompanying it are good. Dr. John Foote's "History of Giovanni Maria Lancisi (1654-1720)" is of more than passing interest. Foote remarks: "In view of the really astonishing amount of original work done by this great pioneer in pathology, it is all the more remarkable that we have learned so little about him."

And so ends Volume II.

STORCK.

Collected Papers of the Mayo Clinic, 1916. W. B. Saunders Company, Philadelphia and London. Vol. VIII.

This volume of one thousand pages contains papers contributed by members of the staff on a wide range of subjects. In this clinic there are no drones, all are workers, and most of them contributors to the accumulating of medical knowledge and experience. It would be impossible, in the space allotted for review, to make anything like adequate reference to the various articles in this veritable storehouse of medical lore.

PARHAM.

Clinical and Laboratory Technic, by H. L. McNeil, A. M., M. D. C. V. Mosby Company, St. Louis, Mo., 1916.

Clinical and Laboratory Technic is divided into three parts, namely. History taking, physical examination, and common laboratory methods used in diagnosis.

Under each heading the author has made subdivisions and all are tabulated in such manner as to make them readily understood and easily followed.

The experience of Dr. McNeil as a doctor and as a diagnostician makes this little volume of especial value to the medical student and general practitioner. He has given in a concise and condensed form the various tests used in making the average laboratory examination.

There is no expenditure of useless words nor repetition of tests, as is frequently found in books on laboratory technic.

The laboratory worker feels a debt of gratitude to Dr. McNeil for having published this very useful little guide.

ELIZABETH BASS.

Medical and Surgical Reports of the Episcopal Hospital of Philadelphia.
Vol. IV, for the year 1916.

This volume, the publication of which was made possible by the generosity of a friend, is made up mostly of short papers by members of the hospital staff, but there are also several very valuable articles of greater length. Ashhurst contributes one on "Multiple Cartilaginous Exostoses," one on the "Von Mosetig-Moorhof Iodoform Wax Bone-Filling," and another on "Encapsulated Empyema and Abscess of the Lung," all of which will repay perusal.

It is unfortunate that all good hospitals do not publish such reports of the work of their staff.

PARHAM.

A Manual of Otology for Students and Practitioners, by Charles Edwin Perkins, M. D., F. A. C. S. Lea & Febiger, Philadelphia and London.

This volume of 455 pages is the product of a practical teacher having a large experience in clinical work and teaching. The book is designed especially for students who are beginning their otology seriously, and is intended to give him a grasp of the subject in a moderate amount of time with a moderate amount of reading.

The fourteen chapters follow in remarkably good order and the statements are concise. Special attention to the anatomy is given, and the pathological changes are well described, so that the student may well understand what changes are taking place. The chapter on the labyrinth is simple and plain and should appeal to the beginner. The illustrations are very clear and well placed throughout the text.

The volume as a whole is very desirable to those for whom it is intended.

LYNCH.

The Catarrhal and Suppurative Diseases of the Accessory Sinuses of the Nose, by Ross Hall Skillern, M. D. J. B. Lippincott Company, Philadelphia and London.

This volume, the second edition of Skillern's work on the accessory sinuses, stands as one of the pedestals of modern American rhinology and is a contribution for which every American should feel proud—not only because it is the first volume in the English language upon this most important and all-absorbing subject, but because of its completeness in the minutest detail, in the clearness of the descriptions, in the elegance of the illustrations, and in the general arrangement, it is typical of that which we are proud to call American.

This second edition is, as it should be, an elaborate improvement upon the first. The changes in our operative technic are many, and those which have stood the test of time and experience have been added in this edition.

The treatment of the sinuses in children is new and fills a most important place in this modern time. The use of the pharyngoscope, as an aid to diagnosis, is more than worth while. The elaboration of the text on the puncture of the antrum is a timely addition.

The consideration of the treatment post-operative of the sinuses has long been wished for, and, while many different opinions may be ex-

pressed, those laid down in this text are carefully considered and will be a guide to all.

This volume belongs not only to the beginner student or embryo rhinologist, but must be the property of the tried, trusted and experienced rhinologist as well, for in it he will have access to all the improvements that have given satisfactory results.

I most heartily recommend it to you for use on all occasions when thinking of sinuses.

LYNCH.

The Animal Parasites of Man, by H. B. Fanthom, J. W. W. Stephens and F. V. Theobald. Wm. Wood & Co., New York.

This work is based on the translation of Braun's fourth German edition, which appeared in 1908, including an appendix by Dr. Otto Seifert. Most of the sections have been rewritten and so completely changed in order to bring them up to date that it makes practically a new work on this important subject.

The book contains over eight hundred pages and is so complete and extensive that no brief review that I could make here would do it justice. It is simply a complete, authoritative book on the subject brought right up to date. Any one who desires information on the animal parasites of man can find it in this book. Symptoms, treatment and much else of practical value are given proper consideration.

C. C. BASS.

Practical Urinalysis, by B. G. R. Williams, M. D. C. V. Mosby Company, St. Louis.

This little volume is intended as a guide for the student and practitioner. Completeness is not claimed. Attention is paid to tests for products of erroneous metabolism or excretion, and a discussion of the interpretation of the findings in such tests. It so often occurs that practitioners are unable to make proper application of the laboratory findings in their cases, especially with reference to the chemical analysis of urine, that it behooves all to pay good attention to such works as this present one. It contains much of value to the general practitioner and also to the laboratory man.

C. C. BASS.

Clinical Bacteriology and Hæmatology, by W. D'Este Emery, M. D., B. Sc., P. Blakiston's Son & Co., London.

This is the fifth edition of a most practical laboratory guide intended originally for the general practitioner. In this edition the author has included some sections which, as he says, will hardly be required by the general practitioner. They are, however, especially useful to the present-day laboratory worker. A section on the "Diagnostic Application of the Blood-count as a whole" will be found useful to general practitioners, many of whom need to inform themselves better on the proper interpretation of laboratory findings in general.

C. C. BASS.

Blakiston's Quiz Compends. Materia Medica, Therapeutics and Prescription Writing (Potter). Eighth edition. Revised by A. D. Bush, B. S., M. D. P. Blakiston's Son & Co., Philadelphia.

The editor of this volume announces that it has been thoroughly revised in conformity with the ninth revision of the U. S. Pharmacopeia. As a summarized presentation of the subjects included in its title, the book has a continued popularity, as its eighth edition would indicate.

DYER.

A Compend of Human Physiology, by Albert P. Brubaker, A. M., M. D. Fourteenth edition. P. Blakiston's Son & Co., Philadelphia.

This compend aims at a review of the important phases of physiology for the easy digestion of the medical student. The usefulness of any abbreviated text on so important a subject may be questioned, but, of its kind, this book has always had a place. DYER.

Progressive Medicine. Edited by Hobart Amory Hare, M. D., and Leighton P. Appleman, M. D. Vol. XX. Nos. 1 and 2. Lea & Febiger, Philadelphia and New York.

Aside from the number of valuable contributions which add to the features of these volumes, the timely presentation of current diseases makes the review of large service to the practitioner who is deficient in the practical clinical study of such conditions. For example, Volume I has a considerable space devoted to the infectious diseases, while Volume II has an excellent review of the surgery of the abdomen. The careful selection of material and of contributions continue to be a notable characteristic of this publication. DYER.

The Mastery of Nervousness, by Robert S. Carroll, M. D. The MacMillan Company, New York.

A philosophical attack upon the habits of food and exercise, or lack of it in the average individual, young and older. Throughout there is a helpful minor key which suggests the way of compensation, with the formulæ of the effort needed to such an end. Altogether a timely essay for those who may find the chance to stop by the wayside and listen, and perhaps heed the philosopher. DYER.

Medical Clinics of North America. July, 1917.

As the Chicago Clinics, as a separate publication, cease with the issue of the May number, so, as a separate publication, the Medical Clinics of North America begin with the July issue. This is devoted entirely to the work of Johns Hopkins Hospital, and is known as the Johns Hopkins Number.

The Philadelphia number will record the work of the University of Pennsylvania and the Jefferson Medical College.

The New York number will include Columbia, Bellevue, Cornell and the Post-Graduate School.

The Boston number will embrace Harvard, Massachusetts General Hospital, Boston City Hospital and the Peter Bent Brigham Hospital.

The Chicago number will comprise those institutions formerly included under the caption of the Medical Clinics of Chicago

The contributors to this number are Drs. Theodore C. Janeway, Lewellys F. Barker, Herman O. Mosenthal, Thomas B. Fletcher, Louis Hammon and Thos. R. Brown.

We have no adverse criticism to make on this excellent issue. We only ask for the well-deserved support of this admirable series of publications. STORCK.

The Medical Clinics of Chicago. Published Bi-monthly. W. B. Saunders Company, Philadelphia and London. Vol. 2, No. 5, March, 1917. Vol. 2, No. 6, 1917.

We do not advocate the substitution of the printed page for actual

attendance on the clinic, but we do think that publications of this character are very useful and stimulating. It is indeed helpful to be able to communicate with the best of our confrères in hours of leisure and to keep up with the splendid work which is being done in our large and progressive clinics.

The contributors to the March number are: Drs. Frederick Tice, Isaac A. Abt, Charles Spencer Williamson, Herman L. Kretschmer, Ralph C. Hamill, Arthur F. Beifeld, H. H. Schuhmann, Solomon Strouse, Charles Louis Mix, Frank Wright, Frank Smithies, B. C. Corbus and Joseph Friedman.

The authors included in the May number are: Drs. Charles A. Elliot, Frank Smithies, M. Milton Portis, Charles Spencer Williamson, Arthur F. Beifeld, B. C. Corbus, Sydney Strauss, Ralph C. Hamill, Charles Louis Mix, Frederick Tice, Walter W. Hamburger, Isaac A. Abt, David C. Strauss and Frank Wright.

These clinics were held in the several hospitals of Chicago, and can be said to be representative of progressive medical thought in this great American city.

With the current (May) number, the Chicago Clinics cease as a separate publication, becoming merged into the Medical Clinics of North America. We wish the venture success.

STORCK.

PUBLICATIONS RECEIVED

W. B. SAUNDERS COMPANY, Philadelphia and London, 1917.

Diseases of the Chest, by George William Norris, A. B., M. D.; Henry R. M. Landis, A. B., M. D., and Edward B. Krumbhaar, Ph. D., M. D.

Food for the Sick, by Solomon Strouse, M. D., and Maude A. Perry, A. B.

The Medical Clinics of North America. November, 1917.

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J. B. LIPPINCOTT COMPANY, Philadelphia and London, 1917.

Diseases of the Skin, by Milton B. Hartzell, A. M., M. D., LL.D.

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MISCELLANEOUS.

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Office International D'Hygiene Publique. Bulletin Mensuel. (195 Boulevard Saint-Germain, Paris, France).

Quarterly Bulletin Louisiana State Board of Health. Vol. VIII. September, 1917. (La. State Board of Health, New Orleans).

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Sickness Survey of the Principal Cities of Pennsylvania and West Virginia; A Health Census of Kansas City, Mo., by Lee K. Frankel, Ph.D., and Louis I. Dublin, Ph.D. **A Health Census of Chelsea Neighborhood.** (Metropolitan Life Insurance Company, New York, 1917.)

Notes on Parasitic Anaphylaxis and Allergy, by L. Van Es and A. F. Schalk. Bulletin No. 125. Agricultural College, North Dakota.)

Conditions in the Sugar Market (January-October, 1917). (The American Sugar Refining Company, New York City.)

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REPRINTS.

Intestinal Toxemia and Intestinal Stasis; Diagnosis of Chronic Appendicitis; A Diagnostic sign of Gastroenteroptosis; Obituary of Julius H. Eichberg; Umbilical Dyspepsia. By Charles D. Aaron, Sc. D., M. D.

The Coat of Arms of the Medical Corps. By Colonel C. C. McCulloch, Jr., U. S. A.

The Indication and Abuse of Cesarean Section. By Frederick J. Waas, M. D.

Japanese Medical Literature. A Review of Current Periodicals. (Presbyterian Mission, Shanghai, China).

Alcoholic Inebriety, by Frank Fenwick Young, B. S., M. D.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for December, 1917.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	3	2	5
Intermittent Fever (Malarial Cachexia)	2		2
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough	1		1
Diphtheria and Croup	2		2
Influenza	16	14	30
Cholera Nostras			
Pyemia and Septicemia	1		1
Tuberculosis	66	48	114
Cancer	18	5	23
Rheumatism and Gout	4	3	7
Diabetes	2	2	4
Alcoholism			
Encephalitis and Meningitis	2	1	3
Locomotor Ataxia	1		1
Congestion, Hemorrhage and Softening of Brain	30	10	40
Paralysis	1		4
Convulsions of Infancy			
Other Diseases of Infancy	20	4	24
Tetanus			
Other Nervous Diseases	6	1	7
Heart Diseases	72	42	114
Bronchitis	5	1	6
Pneumonia and Broncho-Pneumonia	34	22	56
Other Respiratory Diseases	4	1	5
Ulcer of Stomach			
Other Diseases of the Stomach	3	2	5
Diarrhea, Dysentery and Enteritis	16	8	24
Hernia, Intestinal Obstruction	5	4	9
Cirrhosis of Liver	7	3	10
Other Diseases of the Liver	4	2	6
Simple Peritonitis	1		1
Appendicitis	4	1	5
Bright's Disease	21	13	34
Other Genito-Urinary Diseases	10	10	20
Puerperal Diseases	6	3	9
Senile Debility	6		6
Suicide	2	1	3
Injuries	24	20	44
All Other Causes	38	19	57
TOTAL	440	242	682

Still-born Children—White, 17; colored, 16; total, 33.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1,000 Per Annum for Month—White, 19.13; colored, 28.47; total, 21.65. Non-residents excluded, 16.19.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure. 30.19
Mean temperature. 51
Total precipitation. 2.16 inches
Prevailing direction of wind, northeast.



NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITORS:

CHARLES CHASSAIGNAC, M. D.

ISADORE DYER, M. D.

COLLABORATORS:

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JOHN M. SWAN, M. D., Secty. American Soc. of Tropical Medicine..... } *Ex Officio*
L. R. DE BUYS, M. D., Secretary Louisiana State Medical Society..... } *Ex-Officio.*
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Vol. LXX

MARCH, 1918

No. 9

EDITORIAL

THE PHYSICIAN'S LICENSE TAX.

Now is the time to agitate the question of the license tax imposed on the physicians of this State.

It is notorious that Louisiana is one of the only two States imposing such a tax and that New Orleans is one of a quartet of cities in the whole country doing likewise.

Arguments against the tax are numerous and well known, having been generally discussed for several years in medical societies, by medical journals and newspapers. It is unnecessary at this time to repeat them.

Our purpose is to stimulate in time proper interest and action by the various parish medical associations and to suggest that active steps in the same direction be taken by the officers of the State Medical Society.

The State Legislature will assemble in May next, and there is no time to lose in preparing the question for proper submission and favorable action. We understand that the Governor has already expressed himself clearly as in favor of the repeal of the tax, and this support alone should be a tower of strength.

PROBLEMS.

We are saturated with the psychology of the hour. A questioning mind dips into the turbid pool of an uncertain future and draws out a mass of conflicting ideas—all confusing.

The daily press, mostly honestly, disseminates news which is too meager or contradictory to allow any conclusions. On the contrary, there is a continued unrest, as a result of the disorder. The adjustment of living is not easy and each man finds a new problem nearly every day.

The disturbance of the efficiency of almost every field of effort is a natural corollary, and this must go on so long as the grim specter of war stalks abroad.

The disposition to meet the demands of the hour is everywhere evident, but it is not easy—because of the lack of adjustment. The medical profession has only glimpsed the horizon of its field of effort. Not 50 per cent of the necessary military needs for medical men has been satisfied. Already the authorities are speaking in tens of thousands of medical officers to meet the needs of the army to be raised. At the same time, the smaller country places are beginning to feel the loss of much-needed medical service. The solution must be found sooner or later. Mobilizing the entire profession, speeding medical instruction, organizing under State direction, and other means have been suggested, but nothing has been done.

Meantime great movements have been operating for the proper medical and surgical care of soldiers—before, during and after their active service. Intensive instruction of the Medical Reserve Corps officers has been carried on in the large centers for several months. There is a plan under way to organize a great school for

medical officers at Ft. Oglethorpe, where, in addition to actual military training, provision will be made to give intensive instruction to several thousand men at one time.

Reconstruction hospitals will be established at various points in the United States, at which soldiers returning from the war and incapacitated by injury will be cared for until they are physically able to return to the pursuit of a livelihood. These plans contemplate provision for thousands of such soldiers.

Medical students have been put in the Enlisted Reserve Corps and under military control, so that they may be finished as doctors ready for military duty. The faculties of medical schools are being conserved, and it is likely that their operation will be further assured through some official recognition, in order that they may not lose their efficiency through the constant defection of those who are going into active military service. Many schools have already lost 50 per cent or more of their teaching staffs.

The activities of civil, religious and official endeavors have engaged the betterment of the physical and social surroundings of the soldiers, to the end that in the delay of preparation they may not lose the great *morale* which is so necessary to victory.

The game goes on without much sign of an early end, and the accident of death among those who are already engaged will only spur the rest to a greater endeavor. Utopia seems very far away, and, in the fierce fire of a broadening conflagration, there is small hope for any time to dream. The solution seems to be where the greatest force can be directed at the earliest moment, and the unrest at enforced delays can only make the problem greater and more indefinite.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

DENGUE FEVER.

By COL. C. C. McCULLOCH, Medical Corps, U. S. Army,
Formerly Professor of Military and Tropical Medicine, Army Medical School,
Washington, D. C.

The word "dengue" is said by some to be derived from the Arabic and means "weakness," by others to be a corruption of the Spanish equivalent of "dandy," a term applied because of the stiff and formal manner in which ambulatory patients with the affection carry themselves. A common synonym is "breakbone fever." It has been defined as "a specific and highly infectious fever peculiar to warm climates. It occurs usually in widespread epidemics, and when once introduced into a community it extends, like influenza, with great rapidity, affecting a large proportion of the inhabitants. It differs from influenza mainly in the absence of pulmonary and other serious complications, and in the presence of a well-marked rubeoloid eruption and peculiarly severe rheumatic-like pains in the joints and limbs."

Epidemics of dengue fever are confined chiefly—in fact, almost exclusively—to the tropics and subtropics, since, for practical purposes, the extreme southern part of the United States may be called a subtropical region.

It does not occur in pandemic extensions like influenza, but is more sporadic and capricious in its incidence. Influenza attacks all countries and all latitudes in its course. Dengue strikes certain places only, heavily and extensively indeed, but only here and there, though it may, for instance, attack at the same time places as far apart as China and the United States. It may be stated, no doubt with approximate correctness, that it is present endemically in India, in Egypt and in East and Central Africa and Senegambia, certainly in Beirut on the Syrian coast, and in the West Indies, the latter region apparently being its favorite home.

The history of dengue has not been accurately recorded, as it has been distinctly differentiated only within the last hundred years or thereabouts.

It was present in Egypt and Java in 1799, and extended as far as India on the one side and to Spain on the other. Benjamin Rush

described the symptomatology of the disease as observed in Philadelphia in 1780. Manson says there is a tendency for it to assume a pandemic character about once in twenty years, and to last for three or four years.

In 1824 and the following years it extended very widely over India, parts of Africa and to South America, the West Indies and the southern United States. In the '30s, '40s and '50s of the last century there were other slighter outbreaks extending over a similar area.

In 1870 there began a third so-called pandemic extension, which started from Zanzibar and thence spread successively to Suez, India and Singapore, to Cochin China, China and the eastern Archipelago. The tendency to follow trade routes and travel, which dengue possesses in common with other infectious diseases, is extremely well shown by the history of the extension of this epidemic.

Since that time there have been limited outbreaks every few years. The disease has been seen in Australia and South Africa, in Asia Minor and the Greek Archipelago.

In 1894 it prevailed in the southern United States. At Fort Ringgold, Texas, in that year, nearly every soldier in the garrison was attacked. I was stationed at that post then, and we certainly had a strenuous time for several weeks. We had to turn the barracks into hospitals, and naturally were busy night and day. The fact that the disease is not serious alone tended to render the situation bearable. This epidemic illustrates one of the most striking features of the disease—the great rapidity with which it spreads when once started. In a month's time so many people are affected as to seriously interfere with the business and daily occupations of the inhabitants, in another month nearly every one has passed through an attack and normal conditions reappear, with sporadic cases now and then, perhaps in newcomers.

In 1897 it was present at the same time as yellow fever in Cuba and in Texas.

Dengue has been more or less prevalent among the soldiers in the Philippines since our occupation of those islands. In 1902 there was an annual admission rate approaching 200 per 1,000 of the troops there.

It is only within the last few years that we have begun to have some definite information as to the etiology of dengue. Graham, at Beirout, in Syria, announced the fact that he had experimentally produced dengue fever in a series of cases by the bites of infected

insects, mosquitoes of the species *Culex fatigans*. This statement, received with some skepticism at first, was subsequently confirmed by Ashburn and Craig, of the Army Medical Corps, who carried out an elaborate research along these lines in the Philippine Islands in 1907. Graham also announced the discovery of the parasite of the disease, an intracorpuseular organism in the blood, somewhat similar in nature to the *Babesia bigemina* of Texas cattle fever. Eberle, a volunteer medical officer, a little later described a parasite which he thought he had discovered in the blood. Neither of these observations has been confirmed by more recent investigators. Nobody else has ever been able to demonstrate them. I was surgeon of the post in the Philippines at which Eberle pursued his investigations and saw some of his preparations. Of course, one could not form a definite opinion on a piece of scientific research by casual observation of this kind, but I was inclined to believe that Eberle's parasites were nothing more than artefacts and altered blood corpuscles. Subsequent work not having confirmed his results, this scepticism was doubtless justified.

Ashburn and Craig, in the work above mentioned, were not able to find these or other parasites in the blood or elsewhere in connection with the disease. As stated, they did experimentally verify Graham's discovery in relation to conveyance by the *Culex fatigans* mosquito. They also produced the disease in healthy soldiers by the intravenous injection of the blood of patients suffering from the disease. The blood injected after filtration through a porcelain filter that would retain the smallest known bacteria also produced the disease. This would indicate, of course, that the infective agent is perhaps ultramicroscopic in nature, at least at some period of its development, and therefore in all probability a protozoan of some kind. That the virus might be conveyed in some other way than by the mosquito is, of course, possible, until definitely disproved, but, judging by analogy with malaria and yellow fever, the probability is remote that any other method of transference from the sick to the well will ever be discovered. The period of incubation averaged about three and a half days, varying from two and a half to seven days. Some subjects of the experiment appeared to be absolutely immune. An attack produces immunity, but it is not known what is its duration. There is no special racial or sex or age distribution.

In regard to the varieties of the mosquito other than the *Culex fatigans* which may convey the disease, the facts cannot be regarded

as quite absolutely determined. From the quite constant association, however, of that species in large numbers with the dengue, and the consideration of the map distribution of the *Culex* mosquito and the disease, it seems probable that it is the principal one concerned. Brooks, however, states that, in one epidemic which he observed, the only mosquito present was the *Stegomyia calopus*. In Australia, in 1916, the *Stegomyia calopus* was experimentally proved to act as a vector.

As in some cases the mosquito conveyed the disease within twenty-four hours of the time it had become itself infected by biting a dengue patient, the investigators think that the parasite does not undergo a developmental cycle in the insect, but is for an indefinite time retained in a virulent condition in the mosquito's stomach and is regurgitated through the proboscis at the time of the bite. It was shown that the virus is infective in the patient's blood on the third or fourth day after the beginning of the symptoms. Experimentation on this point has, however, not been sufficiently extensive to definitely settle just when and for how long the virus is infective in the patient's blood.

Craig has published an interesting paper in which he emphasizes the similarity in many points between dengue, yellow fever, and Pappataci fever. Clinically the symptoms of all three are in many ways not unlike, and etiologically the resemblances are still more striking, from the fact that there is a virus present in the blood only at certain times, that the injection of filtered and unfiltered blood will produce the disease after very similar periods of incubation, that all are transmitted by insects, and that, in all, the infecting agent is evidently ultramicroscopic. Furthermore, these diseases are all infectious, but not contagious. In many ways they resemble the malarial fevers.

Craig thinks that these facts and analogies indicate that the diseases in question are caused by some kind of parasite with whose peculiar nature we are at present unacquainted, and which probably differs in important respects from any with which we are now familiar. He thinks that when the microscope is further perfected, or when some method of staining or culturing these organisms is discovered, they will be found to be closely related species of the same genus and most probably protozoal in nature.

The *symptoms* of dengue are quite characteristic in the great majority of cases, the pains, the fever and the rash being the promi-

nent triad of manifestations that the patient complains of and that are usually noted.

The onset is variable in my experience, sometimes with slight feelings of *malaise* for a day or two, but often coming on rather suddenly, with chilliness and pains in the head and lumbar region and in the limbs, followed in a few hours by burning fever and more severe pains.

Most often the pain is the symptom first complained of by the patient. Sometimes the pains are described as having come on with great suddenness and violence, as, for instance, while dressing in the morning. An observer forty years ago stated that "in all cases pain of greater or less severity is present. In the great majority it is the most urgent and distressing symptom, the earliest harbinger, the persistent companion and the last vestige of the disease." Another writer states that, "in more than half of the cases of dengue I have seen, the pain in the joints has been a symptom so well marked as to distinguish it from all other eruptive fevers." The same author thought pain in the small joints almost pathognomonic of dengue. There is nearly always headache and pain in the back; the headache is often described as racking or maddening, and frequently as if in the eyeballs; that in the back, as if it were being broken in two or the patient had been beaten with sticks.

I should not say, however, that these pains in the head and back are especially pathognomonic. I do not think they are as constant or severe as they are, for instance, in yellow fever, and especially in smallpox. They are often not severe, and may be absent. I, myself, remember having had a very pronounced case of dengue in the Philippines some years ago (after passing unscathed through the big epidemic at Fort Ringgold and several other subsequent ones, by the way) in which there was a very typical rash and rather high fever, with only a slight aching in the lumbar region and legs, and absolutely no sign of a headache at all during the entire course of the attack.

The characteristic pains, I should say, are those in the limbs. They are sometimes mild, and the fact is elicited only by questioning the patient, but they are always present, I think, and are generally bitterly complained of by the patients. They are usually referred to the joints, though often described as being felt in the long bones or deep muscles. Manson says they are difficult to locate with precision. There is, as a rule, no redness or swelling of the joints. There is almost constant desire and effort to change the

position into a more comfortable one; at the same time these movements cause pain, and the sensations of the patient are in consequence often exceedingly disagreeable, as one can readily imagine.

Some writers describe after-pains in the joints as often continuing long into convalescence, but I do not myself recall observing this complication.

As to the temperature, there is described what is called a typical curve; this shows a sharp rise to the maximum within the first twenty-four hours, ordinarily to about 104° F., with a fall on the second day to from 100° to 102° , where it continues to about the fifth day, when it rises again to a point almost as high as it did at first. In another day or two it falls by crisis to normal. Now, one often sees a curve something like this, and then it is, as Ashburn and Craig say, practically pathognomonic of the disease. But one does not, I should say, see this curve always, although Ashburn and Craig think that in the majority of cases one can, on careful examination, trace the type even through the manifold variations that occur. This is quite possible, and I may have missed the point through lack of time or attention paid to the study of the charts. I am inclined to agree with Rogers, who quotes Charles, to the effect that dengue is ordinarily a disease of one paroxysm—a “three-day fever,” it was often called, until we began to use that term for another specific disease manifested chiefly by fever. According to this idea, the temperature in dengue rises rapidly during the first twenty-four hours to 103° to 105° F., and then falls quickly about the second or third day to normal, or often below it, perhaps as far as 96° F. It does not then rise again unless from some accidental or complicating cause. During the time the temperature is elevated, it is observed frequently, the chart may show several remissions in the course of twenty-four hours. These observers attribute the so-called typical curve, which they say is comparatively rare, to be the occurrence of a sort of relapse grafted on to the original curve; what are ordinarily known as relapses, however, occur later. Manson says there is commonly a terminal rise from the fourth to the seventh day to 103° or thereabouts, which lasts only for a few hours.

It may be that the secondary rise occurs in the night, and, lasting only for a short time and often not rising very high, is missed in that way. Conditions we know in dengue epidemics are not favorable to close observation of symptoms. The patients are so numerous, and they are more interested in getting relief from their pains than in being made the subjects of scientific observation.

One is busy, sleepy and hungry, perhaps, and he puts this part of the work off until the next time.

A promising piece of reasearch might be done sometimes in one of these big epidemics to make the careful registration, say at four-hour intervals, of the temperature curves in a large series of cases, so as to settle definitely the point we have been discussing.

To take up the question of skin eruptions: At the beginning of the disease there is often a primary, red erythematous rash on the face and sometimes also on the extremities. Some describe it as a congestion rather than an eruption. This is generally missed unless especially looked for. According to Ashburn, it resembles a sunburn, or the effect of a hot bath. It fades when the temperature falls.

The secondary rash—and this is the characteristic polymorphous rash in dengue—appears on the average from the third to the fifth day of the disease. It is most common on the trunk and on the arms, but is also usually seen on the legs and often on the face, though not to so marked an extent as is measles. The rash closely resembles that of measles—so closely, in fact, that it is perhaps hardly worth while to try to distinguish any difference. Ashburn and Craig say it is not so dark and that the macules are not so coarse and not aggravated into such large patches as in measles, and that it is not so plain. This is another point that should be worked out sometime. There is described a type of secondary eruption, somewhat like scarlatina, though not so vivid in color, also an urticarial type. What is ordinarily seen, however, is the rubeolar type above described. It is often of very short duration and generally fades in a day or so.

Guiteras and Cartaya think the rash is actually present in all cases, but that it is sometimes missed by not being noticed or by its being very ephemeral. This appears very reasonable and in conformity with the facts in the case of the acute exanthemata. We could not very well diagnose chicken-pox or German measles, for instance, without any signs of an eruption present in the case. Charles thinks the occurrence of this rash without fever serves to differentiate dengue from all the other exanthemata.

In some cases, if closely watched, a fine furfuraceous desquamation may be observed. Nervous symptoms are seldom marked, though often there is exhibited irritability or mental depression.*

* Stitt, in his large experience in the Navy, has noted in many cases, especially in officers, a well-marked apathy and nervous depression extending through convalescence, which is often slow.

There is generally no albumen in the urine, and, if so, only a slight trace. Some observers describe enlargement of the lymphatic glands. I have seen this complication, but do not think it is common enough to be considered characteristic. Hemorrhage from the mucous membrane is mentioned as an occasional symptom.

The tongue usually shows a yellowish fur in the middle, with red tip and edges. The pulse may be rapid and as high as the elevation of the temperature would lead us to expect. This is an important differential point in the distinction from yellow fever. Some competent observers state that the pulse is "remarkably slow" and "not over 100," and so on. However, even when this occurs, it is not in accordance with Faget's law in yellow fever. It is not so much the actual rate of the pulse that is significant there, though that is slow, as it is the gradual drop from time to time during successive observations of the temperature in the early stages of the disease.

In the examination of the blood in dengue we find no change in the appearance or number of the red blood cells. There is, however, a leukopenia (of about 4,000) and a decrease in the polymorphonuclear leucocytes (to about 45 per cent), with relative increase of the mononuclears. These changes are most marked toward the end of the first week, but may be seen as early as the second day of the disease. There is also, according to Harnett, in India, an eosinophilia during convalescence.

Castellani says that the leukopenia is so constant and usually so marked as to be of considerable diagnostic importance.

Relapses are said to be frequent in dengue. Immunity perhaps does not last over a year or two. Some authorities, however, say that one attack protects, as a rule. The essential symptoms, according to Manson—and there is no other medical writer who can describe a disease accurately in so few words—are "suddenness of the rise of temperature, an initial stage of skin congestion, limb and joint pains, and a terminal rubeloid eruption."

As to the *diagnosis* of dengue: There should be no difficulty in recognizing it during one of the extensive epidemics so characteristic in its occurrence. Things are so plain then that "he who runs may read." But the first few cases of an epidemic, perhaps, or those cases that crop up more or less sporadically in places like Manila, where the disease seems to have become, in a sort of fashion, endemic, some of these cases, to repeat, may give rise to some difficulties in diagnosis. They will not often then be so difficult, I

think, if one will make a careful and detailed study of the history and symptomatology of the case.

The careless sort of professional work that confuses dengue fever and influenza, for instance, because of their similarity in rapidity of spread and in the great numbers of people rapidly affected, seems to me to be inexcusable. I have seen many epidemics and a large number of cases of both these diseases, and, judging from my experience in the matter, these two diseases are no more alike than are, for instance, acute bronchitis and German measles. Both are febrile in their nature and there is the similarity we have several times mentioned in the way they spread; beyond these things they have nothing in common.

The catarrhal symptoms, on the one hand, and the eruption and characteristic pains on the other, are the most important pronounced differences.

Of course, one must bear in mind that there are some mild cases occurring in all epidemics of infectious diseases that do not show any characteristic symptoms, and, in the absence of any specific blood or bacteriological tests for the disease, are really undiagnosable, except from their association with more typical cases. I am speaking in general terms only about the confusing of these diagnoses, but one will find, I think, that the idea is a practical one when he comes to handle the cases. If we know thoroughly the symptomatology and study and observe the cases carefully, it is in exceptional cases only that one will not be able to arrive at a satisfactory diagnosis from clinical symptoms alone. This is probably true throughout the whole practice of medicine. Physicians are perhaps inclined to depend too much on laboratory tests and trust to them somewhat to the exclusion of other clinical methods. For instance, they will allow themselves to get rusty on the physical examination of the chest, and miss diagnoses of early tuberculosis, when the laboratory findings are reported negative. We must remember that splendid diagnostic work was done before the development of any of our modern microscopic and laboratory methods. It appears, however, as though after a while we will only have to send our patients to the X-ray room to get pictures that will suffice in themselves for diagnosis.

But I must not digress further. Personally, I think there are only two diseases that are of much importance when we consider the question of the differential diagnosis of dengue, and these are yellow fever and measles.

As to yellow fever, one of the main points is the difference in the pulse rate in the two diseases. We note Faget's law of decreasing pulse rate with increasing or stationary fever during the early days in yellow fever; and, on the other hand, the sometimes quite rapid pulse in dengue. We consider the eruption in dengue and its absence in yellow fever. Brooks states concisely in this connection that "the rash is as much a part of dengue as it is of smallpox or measles." This means, of course, no rash, no dengue. The pains in the one case are chiefly articular and muscular, and in the other appear principally as frontal headache and rachialgia; these are the main points in the differentiation in early and mild cases of yellow fever. The late-appearing symptoms in severe cases of the latter disease are, of course, pathognomonic as opposed to dengue.

In the 1897 epidemic in Texas the best opinion seemed to be that both yellow fever and dengue co-existed, and, of course, there was endless trouble and discussion as to the diagnosis. Some physicians maintained to the end that there was no yellow fever present, that it was all dengue; this in spite of the fact of albuminuria and severe icterus and black vomit and death in some of the cases at various localities. This attitude is, of course, entirely out of the question in the present state of our knowledge of the two diseases. It is simply an expression of that peculiar attitude of mind characteristic of some physicians as well as of men of other occupations, the inability to get away from a preconceived prejudice that fits in with one's inclination and interests. It is an infirmity of the human mind to which all of us are subject to a certain extent; for instance, as we all know, the most accomplished physician is usually not a wise consultant in cases of disease occurring in his own family.

The next important disease in regard to its differentiation from dengue is, in my opinion, the *measles*. This often occurs in the army in adults, and appearing sporadically in one of the more or less endemic dengue districts is likely to give rise to some confusion. The polymorphous eruption of dengue very often resembles so closely that of measles that I, for one, have been unable to distinguish them. I had a case of typical measles in an officer's daughter at Corregidor, with history of exposure, coryza, Koplik's spots and all. The family were much surprised at the diagnosis, saying that she had had a moderately severe case of measles only the year before, or at least it was so diagnosed by the attending physician. On careful inquiry as to the other symptoms she had presented besides the eruption, and the examination of the post records as to the

presence of dengue, it was easy to come to the conclusion that her previous attack had been in fact one of dengue fever, and not of measles. How are we to tell them apart? I think that, by consideration of the history of the case, by the characteristic catarrhal symptoms and Koplik's spots in measles, and by the peculiar articular pains in dengue, we can generally arrive at a correct diagnosis.

Perhaps I should mention a few other diseases that might sometime come in question. It is at least worthy of note that the preliminary rash of dengue may be mistaken for scarlatina. The subsequent course will clear up the diagnosis in these cases. Rheumatic fever, which might sometimes lead to confusion, presents no rash, and there is usually no redness or swelling of the joints in dengue. If there is a question of malaria, the microscopic examination and the use of quinin will decide.

Caldwell described an epidemic of dengue among soldiers in South Africa, in which a striking feature was the appearance of small, shotty and painful enlargements of the lymphatic glands, inguinal, axillary and cervical. The diagnosis from plague was a feature of the study of this epidemic.

The pathology and morbid anatomy of dengue fever may be described as practically *nil*. There has certainly been no characteristic pathology worked up out of the few fatal cases that have been observed. In these cases the morbid anatomy was that of the respective complications that apparently were responsible for the fatal issue, usually pneumonia or meningitis.

As to *prognosis*, the mortality may be said to be almost nothing. No soldiers have died of the disease. There may be some danger of complications in the very young and in the aged, or those with already existing serious organic diseases, but the mortality here is rather that of the complicating condition, the dengue acting merely as a weakening and predisposing cause of death. The general mortality has been said to be increased, most likely in this way, in some epidemics where the statistics have been comparatively studied. A pernicious form of dengue, dangerous to life, which is rare, perhaps even of doubtful occurrence, has been described in India. Possibly the leukopenia existing in dengue would make complicating septic conditions more serious by lessening phagocytosis.

Now a few words as to the *treatment*: This may be briefly described as purely symptomatic. The symptoms, like those of most of the other acute infectious diseases, run a regular course, which, in

the absence of a specific remedy, cannot be cut short by treatment. Quinin has been found not to shorten the disease. We prescribe rest in bed, protection from cold, light diet and cooling drinks, of course. We give cold sponging for the fever, moderate doses of aspirin or phenacetin or Dover's powders for the pain when severe; sometimes morphin subcutaneously when the pains are very distressing.

It is said that purgatives do more harm than good, on account of the muscular movements thereby rendered necessary, which increase the pain.

Bromides, or even chloral, may be necessary for protracted sleeplessness, though Dover's powders are generally efficacious.

For the debility occurring in convalescence, the usual tonics are indicated. If joint symptoms persist, opium and belladonna liniments may be used, with gentle massage, and iodide of potassium internally. Adrenalin has been theoretically suggested for the commonly occurring depression and asthenia of convalescence. In some cases a change of climate may be advisable, and the use of hydrotherapy, massage and electricity as administered at the health resorts will hasten the return to normal health.

In *prophylaxis*, we come back again to rational ground. The only really satisfactory results are those accruing from measures directed at mosquitoes, either at their breeding-places, which will lead to permanent results when properly kept up, or to the protection of the individual from the bite of infected mosquitoes. These methods have been so fully described in recent literature that it is not necessary to repeat them here. Suffice it to say that the results are fully as striking and confirmatory of the mosquito theory of the conveyance of the disease as we have seen they are in the case of malaria and yellow fever.

I have had experience of a striking instance of this sort at a post in the Philippines, where I was stationed two or three years since. This was on Corregidor Island, at the entrance of Manila Bay. There had been considerable dengue fever at that place—in fact, it was one of the places where people were afraid to visit, as they notoriously contracted the fever there. Coincidentally mosquitoes were a great pest. My predecessor as surgeon of the post, Lieut. Col. Woodruff, started a mosquito campaign with a view to improving the condition of the post as to health and comfort, and on relieving him I continued vigorously (there is no use to do anti-mosquito work in any other way) the campaign he had started. We put in screening wherever possible, and that measure was no doubt a help,

but our main efforts were directed against the breeding-places of the mosquitoes. There are no records at hand of the time it took to get results, but the important point is that ultimately the disease was practically abolished from the island. The very few cases that did occur could be traced to Manila and Fort McKinley, and they never acted as secondary foci of infection leading to any spread of the disease locally on the island.

In Port Said the fight against malaria resulted in the simultaneous disappearance of the dengue.

A theoretical means of avoiding infection is more or less complete isolation. This, in the case of diseases not especially dangerous, like dengue, will be found to be impracticable. However, in the case of the feeble, the very young or the aged individual, as in influenza epidemics, it would be well to try to protect them in this way, even to the extent of sending them out of the infected territory.

Rogers has described a fever occurring sporadically in India, principally in seaport towns, and in Ceylon, which he calls "seven-day fever," and thinks it a separate pathological entity. Castellani and Seidelin, on the other hand, believe it is "probably" sporadic dengue. When we look over the description by Rogers of the symptoms of this disease we are at once impressed by the striking resemblance of many of them to those of dengue. Rogers says the disease we are considering has a peculiar saddle-back type of temperature curve which distinguishes it from dengue, but he bases this statement on that theory of dengue which makes it a disease of one paroxysm. However, the typical dengue curve as described by many authorities, viz., preliminary rise, fall for several days, and then a final secondary rise, does not vary materially from Rogers' saddle-back curve in the seven-day fever. He says that rashes occur frequently. The pulse is slow. Pain, he thinks, is not so common nor so characteristic as in dengue. Rogers describes a bacillus, which he found in the blood, apparently related to *B. coli*, but with certain points of difference, and which agglutinated with the serum of patients, but his observations have not been confirmed. It is probably only accidentally present, like Sanarelli's organism in yellow fever.

The "six-day fever" recently observed by Deeks at Panama probably belongs in the same category. I should say we cannot make any dogmatic statement at present, but that the seven-day fever is probably a form of dengue.

DISPOSAL OF HUMAN BOWEL EXCRETA IN THE TROPICS.

By GEORGE P. PAUL, M. D., C. P. H.,
State Director, International Health Board, Rockefeller Foundation, Fiji.

One of the most difficult problems in the tropics, from the public health standpoint, is that of the disposal of human bowel excreta in such a way that it may not become a menace.

The data used in this article were gathered from the author's experiences in the British West Indies and the Fiji Islands.

The subject-matter relates principally to the rural parts of the tropics. Most of the large centers have good systems of excreta disposal. Some have water-carriage systems and others pail and dry privy systems. It may be stated, however, that a few large towns have no general means for the disposal of excreta, and each householder is allowed to do what pleases him.

Soil pollution in the rural parts of the tropics may be said to be universal. In fact, in some places, it is encouraged.

The class of people with whom we have to deal in the tropics makes the problem many times more difficult.

In the tropics the diseases principally spread by neglect of the proper disposal of human bowel excreta are typhoid fever, dysenteries, cholera, diarrheas and hookworm disease. If the institution of efficient means for the disposal of excreta will control the dissemination of these conditions, then very much will have been accomplished toward the improvement of the morbidity and mortality rates in the tropics.

It is frequently asked whether it is possible to approach the ideal in excreta disposal in the tropics? Education will accomplish much, but not everything. It may be said that three great obstructions stand in the way: ignorance, poverty and environment. Included under the last term are the general mode of life, the conditions of the soil, the proximity of the houses in many localities and the limited extent of land attached to each home. The people in the rural tropics live in settlements, in isolated homes, or in barracks or "lines." This last is the usual thing in estates and plantations.

The disposal of the excreta of persons living on estates should not be difficult to accomplish in an acceptable way, as the persons are under supervision and control. For them the pail or the septic tank systems may be used. In the Fiji Islands an unique water-

carriage system is employed on many of the large sugar estates. In the floor of the building runs a concrete drain about a foot deep and a foot wide. Through this drain water is constantly flowing. Over the drain are constructed compartments for individual use.



Rural homes in Barbados, showing proximity of houses.

St. Vincent.—General latrine overhanging sea, for disposal of contents of pail privies. Time allotted is 8 p. m. to 4 a. m.

Barbados.—Coral limestone formation showing large crevices and fissures.

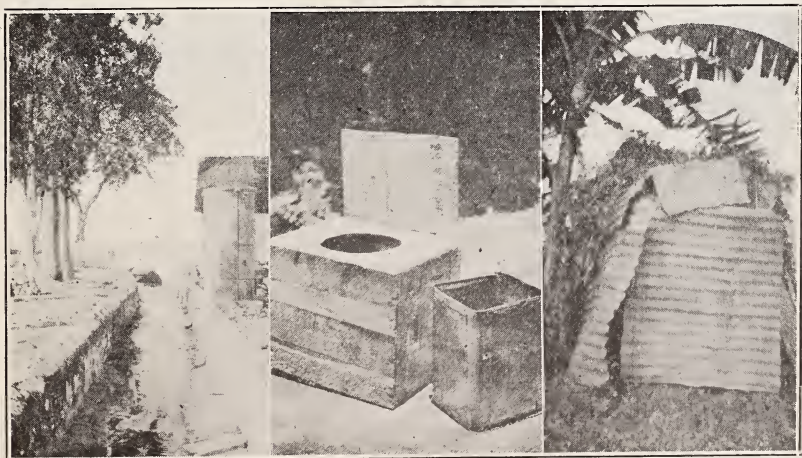
The user simply squats over the drain. The water carries the excreta to a septic tank. The floors of the house are cement, which makes them easy to keep clean.

In some of the tropical towns the pail privy with the conservancy system is employed. If the town is coastal, there is constructed a building overhanging the sea. The pails are daily taken to this

house and the contents dumped into the sea. A time is usually fixed for this purpose, generally during the night. In some places the excreta is emptied from the pails into a boat, which is taken to sea and the contents dumped. The latter method is to be preferred, as it prevents the shores and beach from becoming nuisances from tidal-deposited filth. In some towns the daily emptying of the pails in the established place of disposal is left to the individual householders, whereas in other places the local authorities attend to the collections. Prisoners are often employed for this purpose.

In rural settlements and homes the usual means for the disposal of human excreta, if any exists, is the pit privy. In one locality, of 993 homes, 265 had a privy of some sort, and, of these, only sixty-one may be said to be serviceable. In the village of 103 homes and 390 inhabitants, 102 houses were without any form of privy, the feces being indiscriminately disposed of on the ground near the homes. The incidence of ankylostomiasis in this village reached 99.2 per cent. In certain parts of the tropics the degree of ankylostomiasis infection acts as an index to the degree of soil pollution.

In the Island of St. Vincent the "pail-in-box" method is a much-employed method of disposal. A pail, or rather a kerosene tin, is placed in a fly-proof box, with one end of the box serving as a seat. A self-closing cover is attached. This makes a very efficient and economical form of apparatus. The only objection is that which applies to all forms of pail privies—will the contents be properly and safely disposed of?



St. Vincent.—Public urinal on edge of open drain, near public market.
 "Pail-in-box" latrine in very general use. May be purchased for 18 cents.
 Fiji.—A makeshift privy.

In the Island of Barbados conditions in the rural parts are similar to those of other tropical islands. The public health inspector, in his annual report, states: "In the country districts more than 50 per cent of the houses of the laboring class have no sanitary conveniences of any kind, and the practice of 'going out' (promiscuous deposit of excreta in the open) is almost universal in many villages and plantation tenancies."

The type of privy to be used in the rural parts of the tropics depends upon the character of the soil, the source of water supply, the proximity of the homes, the rainfall and the level of the ground water. The character of the soil has all to do with the safety of the pit privy, as far as the pollution of nearby wells is concerned. If the soil is sandy, it is stated that the distance between privy and well should not be less than fifty feet, better seventy-five or one hundred feet. In clay, coral or limestone formations, fissures and crevices may be present and may permit contamination of water supplies to take place even up to a half mile or more. It is safe to say that if the water supply of the homes is derived from shallow dug wells, and the soil is not sand, then the pit privy should not be countenanced. The construction of a water-tight vault for each home is out of the question, on account of poverty. It must be remembered that the wage earned by the laborer in the tropics does not mount high. From six to twenty-four cents per day is the usual earning.

Where pit privies are allowable they should be properly constructed. The pit should be of sufficient depth; it should be made proof against surface washing by having the earth banked about the edge; the top should be well closed with a portable cover, so as to prevent the egress and ingress of flies. The fly question is a very important one in many parts of the tropics.

The water supply of most of the rural homes is derived from shallow wells with non-protected openings. A few homes, especially those of Europeans, may get their drinking water by collecting it in tanks from the roofs. The level of the ground water of many places near the sea and rivers is apt to be near the surface of the ground. A torrential rain may bring the level to or above the surface, hence surface flushing from privy to well is not uncommon. The rainfall is apt to be very great in the inhabited tropics.

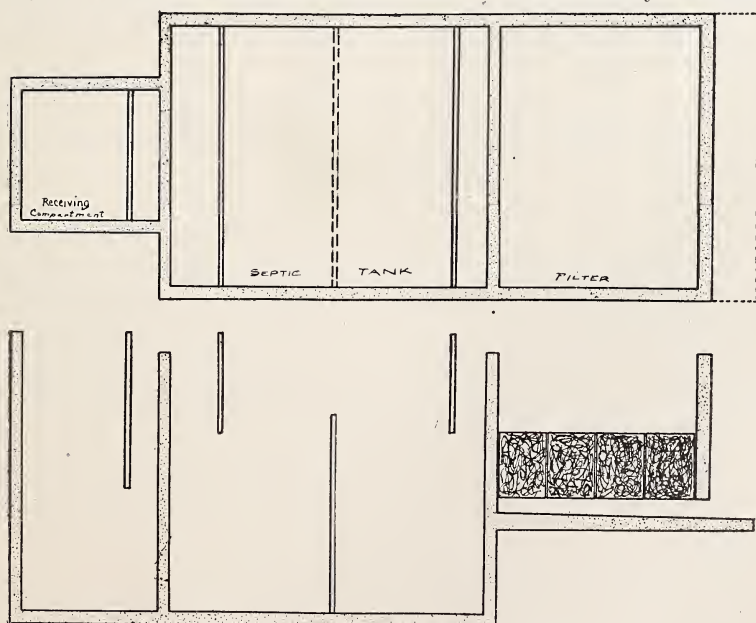
If a pit privy is out of the question, the next consideration is the pail or bucket arrangement. This method may be made to approach

the ideal in the excreta disposal in the rural tropics. At least, it may be made to be practicable and efficient.

A pail privy must be well constructed and fly-proof. The receptacle must be capable of removal without danger of contaminating the surrounding soil or the building, and preferably without entering the privy. The receptacles must so fit that there is no chance of the excreta not entering.

How are the contents to be disposed of? Is the responsibility to rest solely upon the householder? To be practical and efficient, the householder should not be held responsible for the emptying of the receptacles. In places where the householder must perform this work we know that it is not efficiently done. He should, however, be held for the proper maintenance and use of the privy. The local authorities or government should supervise the removal of excreta from the privy to the place of disposal. Prisoners may be employed for this work. It should be done in daylight. Darkness covers a multitude of shortcomings. The pails or receptacles should be uniform. The used pail should be replaced daily with an empty one.

The treatment of the contents of the pails is varied. The excreta may be buried in certain selected sites. If the locality is coastal,



PLAN AND ELEVATION OF SEPTIC TANK.
Filter material may be coral blocks, as shown, or sand.

the excreta may be dumped out at sea from a punt or scow. The employment of a building overhanging the sea is not to be advised. Incineration of the excreta is a most excellent means, but may be expensive, as a certain amount of fuel is necessary. The excrement may be used as fertilizer, but must first be treated so as to render it innocuous. In the Asiatic Orient the employment of human feces as fertilizer is rather common and profitable. The septic tanks treatment of the excreta is probably the best and safest method. If this means is used, neither dry earth nor chemical should be added to the excreta at the privy.

We will not enter the subject of the construction of a septic tank. After the pails are emptied they must be thoroughly cleaned and burned out. A little kerosene is sprinkled inside the tins and then lighted. After burning, the inside of the pails should be lime-washed.

In field-work on estates and plantations the excreta of the laborers should be prevented from polluting the soil by the use of portable "pail-in-box" latrines similar to that illustrated above, but provided with a carrying attachment.

Before real satisfactory public health work can be done in the tropics the question of soil-pollution prevention and proper disposal of human feces must be solved. It is of equal importance to those of water supply and mosquito eradication.

PITUITRIN: ITS VALUE IN POST-OPERATIVE TREATMENT.*

By NEVILLE DAVIS, M. D., AND ROBERT OWENS, M. D., Dalhart, Texas.

Next to the fear of the anesthetic, nothing deters so many patients from submitting to abdominal operations as the suffering of the first forty-eight hours after waking up. What is it that inspires our patients with such dread of these forty-eight post-operative hours, that they are willing to become invalids rather than undergo the operation with its attendant comforts?

It is, firstly, nausea and vomiting; and, secondly, gas pains.

What can we do to banish these bogeys from the minds of our patients?

This subject is, to my mind, second in importance only to the actual technical knowledge of the operative procedure itself. Yet

* Read before the Potter County, Texas, Medical Society, by Dr. Robert Owens.

it is so overlooked as to sink into relative insignificance in the minds of the large majority of surgeons.

To avoid post-operative nausea and vomiting many devices have been evolved. Among these are numbered expertness on the part of the anesthetist in administering the anesthetic; hypodermic injection of morphin and atropin before the operation; washing out the stomach before the patient leaves the table; the use of various anesthetics, separately or in combination, as the open ether method, gas and oxygen, ethyl chloride, chloroform and open ether in sequence. The success that attends the use of these is variable and depends largely upon the individual anesthetist. I do not propose to occupy your time with a discussion of this nightmare, because it has largely been eliminated by the employment in different combinations of the methods I have mentioned. But I do want to direct your attention to some of the work which Dr. Neville Davis and I have done at our hospital at Dalhart.

This work is a continuation of a series of cases which Dr. Davis started in Australia, before coming to this country, and by means of our experiments we have been able to satisfy our patients and ourselves that the bogey of post-operative gas pains is largely exaggerated. You all have had brought to your notice Crile's theory of anoci-association, and the plan by which he hopes to alleviate post-operative suffering by the use of local anesthetics. Many of you have undoubtedly seen the Mayos at work, and their skillful handling of viscera with a view to avoiding traumatism and paresis of the muscular coats of these organs. Both of these methods have unquestionably given wonderful results in the way of diminishing post-operative suffering, but few of us lay claim to the skill of these masters. Personally, we recognize our own shortcomings in the delicacy of touch of a Mayo, and we have been unable to obtain the results of Crile.

We have found, however, that the bogey of post-operative gas pains can be laid to rest by a much-discussed and abused drug, viz.: pituitrin. Our investigation with this drug along these lines was purely accidental, and only confirms once again the old-time adage that "out of evil may come much good."

When pituitrin first came into prominence for the shortening of labor, Dr. Davis noticed in one unfortunate case that it produced a very marked contraction of the unstriated muscle of the uterus, and again, a few days later, that intestinal colic was produced when it

was administered to control menorrhagia. From this starting point he began to inquire whether it would not act upon the unstriated muscle of the intestinal canal, and found, upon conducting a series of experiments with normal healthy individuals, that pituitrin, given hypodermically, 1 c. c. every four hours, caused cramping in the abdomen and frequency of defecation. Dr. Davis then determined to see if this action were present when the intestine and abdomen were not in a normal condition. He began to use pituitrin hypodermically in all abdominal operations, and the result has been completely satisfactory to us. The individuals did not experience intestinal cramping, but the intestines were saved from that state of paresis which so commonly takes place after handling. It is this paresis which produces the accumulation of gas in the intestines, because of the failure of the normal peristaltic action of the bowel to propel it forward.

The method of using pituitrin was as follows: Morphin, gr. $\frac{1}{6}$, and atropin, gr. $\frac{1}{180}$, were given hypodermically one hour before operation. Immediately following the operation and before the patient was returned to bed 1 c. c. of pituitrin was given hypodermically. This dose was repeated two hours later; $\frac{1}{2}$ c. c. given four hours after the operation and another $\frac{1}{2}$ c. c. eight hours after the operation. Unless the case was a very extensive one, involving considerable handling of the abdominal viscera, no more was given, but, in these severe operations, doses of $\frac{1}{2}$ c. c. were continued every four hours until twenty-four hours after the operation. Twenty-four hours after the operation three grains of calomel were given one-half grain every half hour, and this was followed by a saline purgative to prevent cramping. Our series of experiments extended over 126 consecutive cases in which the abdomen was opened. We refrained from selecting special cases, in order that our results might have a general application. To avoid actual colic, we gave an enema four hours after the saline purge.

We arbitrarily divided our series of 126 cases into two groups: Group 1, cases in which there was not any septic peritonitis at the time of operation; Group 2, cases in which septic peritonitis was present at the time of operation.

The first group contained 104 cases and the second group 22. We watched the effects of the pituitrin clinically, and our results are expressed in the following tables:

Table 1—Group 1. Non-Septic Cases. Total, 104.

	Cases.
Flatus passed during the first 24 hours after operation.....	91
Rise of temperature above 100° F. any time during the first 48 hours..	7
Increase of pulse rate above 100 per minute any time in 48 hours.....	9
Gaseous distention of the abdomen so that dressing had to be loosened..	6
Failure of bowels to act once in 36 hours.....	5

Table 2—Group 2. Septic Cases. Total, 22.

	Cases.
Flatus passed in 24 hours after operation.....	8
Rise of temperature above 100° F. any time in 48 hours.....	20
Increase of pulse rate above 100 per minute in 48 hours.....	18
Gaseous distention of the abdomen so that dressing had to be loosened..	11
Failure of bowels to act once in 36 hours.....	9

The operation on the cases that comprised Group 1 were: Appendectomy, hysterectomy, salpingo-oöphorectomy, single or double; salpingectomy for ruptured extra-uterine pregnancy, gastro-enterostomy, strangulated hernia, intestinal obstruction, reduction of intussusception, cholecystotomy, cholecystectomy, supra-pubic cystotomy, lateral entero-anastomosis, and splenectomy. The operations performed on the patients constituting Group 2 were: Efficient drainage for ruptured appendix, appendiceal abscess, ruptured hydatid cyst of the liver, perforated gastric ulcer, perforated duodenal ulcer, rupture of a strangulated ovarian cyst, accidental rupture of gangrenous intestine during resection of bowel, ruptured gall-bladder, and ruptured pyosalpinx.

It will be manifest that our series was thoroughly representative of abdominal sections and that no attempt was made to achieve results at the expense of selection of cases. As up to the present there has been considerable difference in strength in the standardized products of pituitary gland of different manufacturers, a fact which has been amply brought out by Roth and by Hamilton and Rowe, and to provide uniformity and to eliminate the possible error that could have crept in from the use of different brands of pituitary extract of various manufacturers, we employed Parke, Davis & Co.'s standardized product entirely.

The mortality rate in the series was gratifying, there being four deaths among the cases in Group 1, or slightly less than 4 per cent, while there were six deaths in the cases of Group 2, or a rate of 27 per cent.

While we were conducting our series we met with nine cases of

eclampsia, one of which terminated fatally within ten minutes of the first seizure. In seven cases the first fit occurred before the onset of labor; in one case the convulsions began during labor, while in the other case the first convulsion took place after the birth of the child, but before delivery of the placenta. In all cases pituitrin was given along the lines previously outlined, except that its use was kept up for seventy-two to ninety-six hours. We noticed that the secretion of urine commenced earlier and was less scanty than in cases in our practice prior to these experiments.

As regards the use of pituitrin to shorten the time of labor, we want to say that we have long abandoned this drug for that purpose, as our experience has shown that it is as dangerous as ergot and should not be used until after the expulsion of the placenta, and then only to anticipate post-partum hemorrhage.

The conclusions drawn from our series of experiments are:

First. That pituitrin is a valuable drug in stimulating the muscular coat of the intestine after abdominal section in non-septic cases.

Second. That it is of decided assistance in preventing post-operative shock after abdominal section in non-septic cases, as evidenced by the lack of rise of temperature and pulse rate.

Third. That it had very little, if any, effect upon cases complicated with septic peritonitis, but our results in this group are inconclusive, on account of the small number of cases.

Fourth. That it stimulates the secretory action of the kidneys in cases of eclampsia.

Fifth. That it materially reduces the amount of post-operative suffering.

Gentlemen, I thank you for your attention in listening to this paper. Although our work has not produced any new method in surgical procedure, we feel that we are able to offer you a solution of the problem that confronts you in tiding your patients over the painful forty-eight hours following abdominal section.

DISEASES OF THE EYES IN CUBA, A TROPICAL COUNTRY.*

By DR. JUAN SANTOS FERNANDEZ, Havana, Cuba.

[Translated by A. M. McSHANE, M. D., Greenwood, Miss.]

In the Island of Cuba we find no record of scientific work until Havana was captured by the English in 1861, at which time the isolation from the rest of the world imposed by Spain on all of her colonies was shaken off.

In the last decade of the eighteenth century the Governor-General, Don Luis de las Caras y Arrigorri, created the patriotic society of the "Amigos del Pais." He also instituted the "Papel Periodico," which was the first exponent of the press in Cuba. He founded the "Casa de Beneficia y Maternidad," which was a colossal work for that time. Under the stimulus of the Governor-General, Dr. Romay, who wrote the first memoir on "Vomito negro" ("Black vomit," yellow fever), observed in the squadron of Aristizabal, which brought the disease from Mexico, occupied himself with the improvement of his country.

At the beginning of the nineteenth century Dr. Romay introduced vaccination into Cuba. He also opposed burials in churches, and his co-worker in this field, Bishop Espada, established the first cemetery outside of the city. Dr. Ambrosio-Gonzalez del Valle deserves to be remembered for his valuable labors as a hygienist. The mantle of Dr. Romay fell on the shoulders of Dr. Nicolas José Gutierrez, who adorned Cuban culture in the first half of the nineteenth century. He founded the Academy of Medical, Physical and Natural Sciences of Havana in 1861, which followed that of New York only by ten years.

In spite of the great advancement of medical sciences in general, ophthalmology in Cuba, just as in most other parts of the world, scarcely gave any sign of life. Only in certain scientific centers in Europe and the United States was the knowledge of the eye cultivated. The surgery of the eye was merely a branch of the general surgery, and so fell under the care of the general surgeon. The first notices of Cuban ophthalmology that appeared in foreign literature were due to an Italian physician and a French writer, Dr. Carron du Villards, who visited Cuba about the middle of the

*Contributed by Harvard School of Tropical Medicine. Should have been read before the School, but the author was recalled suddenly to Cuba.—Eds.

last century. This fact alone is noteworthy, for it required a good deal of courage to visit the home of yellow fever. Dr. Valli, of Pisa, Italy, paid for his temerity with his life, as did also Dr. Antommarchi, who was the physician to Napoleon I in St. Helena.* From Carron du Villard's publication we learn that diseases of the eye were at different times introduced into Cuba by the negro slaves from Africa, but it was not really trachoma, but other kinds of ophthalmia, that were due to the crowded condition in which the negroes lived in the small sailing vessels, without any attempt at hygiene. If trachoma ever were introduced at any time it did not thrive among the negroes, who lived in considerable numbers on the large sugar plantations. One reason why it did not thrive was because the owners of these plantations took extreme care of their costly chattels, for negro slaves cost from \$500 to \$1,000. Furthermore, the heat of the climate did not compel the subjects of eye disease to live closely, as they do in Egypt, where the contagion spreads in the home, but to live out in the open air, thus unwittingly adopting the most efficacious hygienic measure for combatting those diseases.

I do not admit the claim made by certain authorities that the negro is, in a measure, immune to trachoma, but the point has been as much discussed as the belief that trachoma does not develop at high altitudes.

Although we do not have the precise germ of trachoma any more than we know that of yellow fever, we can adopt restrictive measures in the former disease just as in the latter.

In my numerous papers on the subject of trachoma, I have shown that the disease does not develop in the island, owing to the vigilance of the health officials at the various ports, especially Havana, and to the campaign of education carried on by the medical schools.

Some years back I published the only known clinical case of amaurosis due to yellow fever, in which an ophthalmoscopic examination was made. It will perhaps remain the only case of the sort to be recorded, because, thanks to the splendid work of the Rockefeller Institute, yellow fever bids fair to become as extinct as the dodo.

From the time of my arrival in Havana in 1875 I undertook to

* Dr. Antommarchi settled in New Orleans for a while after the death of Napoleon, who hated and distrusted his physician most heartily. He did not prosper in New Orleans, and we read the last chapter of his life in Dr. Fernandez's brief notice above.—NOTE OF TRANSLATOR.

determine whether the loss of sight in cases of malaria was due to the malaria itself or to the quinin with which the disease was treated. I must begin by saying that, at that time, the authors occupied themselves with very few manifestations of paludism; and of the disturbances of sight due to quinin there were only a few observations published by von Graefe, who, though dying prematurely, left no field of ophthalmology unexplored. I found myself face to face with a problem which I had to solve with the cases sent to me, and which were ascribed solely to paludism. The cases in which I found optic neuritis and retinal hemorrhage proper to malaria were the fewest, and were only affected with amblyopia. In cases of complete amaurosis I did not meet with optic neuritis or retinal hemorrhage, but, on the contrary, ischæmia of the papilla of the optic nerve. Cases of the first class got well in a few days; of those of the second class, some never did entirely regain vision, and the papilla terminated in atrophy. This last condition was not due to paludism, which, at that period, was confounded with various other infections, and, assuming them to be malarial, quinin was administered in such massive doses that the patients, if they recovered from the fever, remained blind, and even at the present day I occasionally treat patients from that epoch of more than forty years ago.

My writings on that subject served to call the attention of clinicians to the abuse of quinin, and to dissuade them from giving the drug in such large doses, which were unnecessary even when the patient really had malaria. A distinguished colleague, who had practiced medicine in Havana for twenty-five years, wrote to me that he had seen but few cases of amblyopia and amaurosis provoked by quinin. The reason is clear: the abuse of quinin had ceased in Cuba, and no more cases were seen.

In regard to the effect of tobacco on the sight, which had been discussed by my teachers in Europe, I had to form a new criterion. Almost all eye patients coming to Paris from Cuba, which was the cradle of the tobacco industry, were supposed to be affected by it. In those that originated in Paris I afterwards had to modify the diagnosis. I changed what I had learned from my teachers concerning the effects of tobacco in disturbances of vision for some cases of atrophy of the papilla or optic nerve, due to other causes, were diagnosed as tobaccic or nicotinic amblyopia or amaurosis in Europe. In 1875 I began carefully to observe these cases, and

I became convinced that pure nicotinic amblyopia, without the intervention of alcohol, was easier to observe in Cuba than out of it, in spite of the fact that Havana tobacco was less injurious than other kinds, because of its smaller nicotine content. Hence, we can study the isolated action of tobacco on the eyes, since alcohol is abused only under certain circumstances, for example, during war-times.

When I returned to my own country from Paris, in 1875, the events of the Paris Commune of 1871 were still fresh in the public memory, and it was then that the illustrious Galezowski set down the symptoms of the ocular disturbances due to alcohol. It suffices to take small doses of some alcoholic beverage every morning, fasting, in order quickly to affect the sight. I confirmed this when I returned to Cuba, which I found in a state of war. When this ended, the ocular disturbances due to alcohol steadily diminished, only to reappear on the resumption of hostilities, and they almost entirely ceased on the return of peace.

Affections of the lachrymal apparatus scarcely figure in the clinical statistics of Cuba. Such disorders are much less common there than in France or Spain. I attribute this to racial differences, and especially the negro race, whose nasal canal some anatomists supposed to be wider than that in the white race, and, therefore, not so easy to become the seat of a stricture. In 1901, at the Thirteenth International Medical Congress in Paris, I exhibited craniums of whites, blacks and mixed breeds, and I showed then that the former statement was correct, namely: that the nasal canal is wider in the pure negro race than in the white or mixed race. I also directed attention to the fact that this anatomical peculiarity could be utilized in medico-legal investigations. I am under obligations to Dr. J. A. Presno, of the Faculty of Medicine, for these anatomical specimens. This collection of skulls is still preserved in the Museum of Natural Sciences of Havana, where the above facts may be confirmed.

Another subject which I wish to touch upon is *hemeralopia*, which is not frequent, but is sometimes encountered in the clinics of Cuba. The first cases I observed were sailors from sailing ships, that had made the voyage from Buenos Aires to Havana with a cargo of *tasajo* (dried beef), or beef preserved with salt. This food was formerly used much more than at present, since it was the staple ration of the slaves, for it was proven to be the most

nutritious. I at first attributed the hemeralopia in these sailors to the general anæmia due to a long voyage, but when I later observed hemeralopia in Cuba in farm laborers and other workmen exposed for many hours to a tropical sun I attributed it to the depressing action of the intense light which affects the retina, destroying the visual purple (erythropsine), which is consumed by light and is regenerated in darkness. This regeneration is retarded by anemia. I have confirmed this by observing persons suffering from hemeralopia effectively cured by the hypodermic injection of normal horse-serum. In the same way retinal asthenopia is produced in sponge fishermen in Babano, which I also attributed to the intense action of the sun and to the efforts of accommodation due to the bad position of the head which they adopt while working.

FRONTAL SINUS OPERATION (LOTHROP) PERFORMED UNDER LOCAL ANESTHESIA.*

By M. P. BOEBINGER, M. D., New Orleans.

The object of this paper is to report a case of pan-sinusitis in which all previous methods of treatment had failed and in which relief resulted from operation under local anesthesia. The case had been previously treated by Douglas puncture of the left antrum only and frequent washings without result. Later a Caldwell-Luc was done on the same antrum, with likewise negative result. When first seen by the writer a diagnosis of pan-sinusitis was made, and the opinion expressed by him that the antrum was simply acting as a reservoir for trouble higher up.

The diagnosis was made by observing the flow of pus on both sides, coming from above and below the middle turbinate, as well as pus upon the posterior wall of the pharynx. Trans-illumination showed darkness for both frontal sinuses and right maxillary. This diagnosis was further corroborated by the findings of Dr. Adolph Henriques upon X-ray examination. Only the application of cleansing agents was made until the date of operation, November 22, 1917.

On this date the case was prepared for frontal sinus operation under local anesthesia, a full breakfast being given and morphin sulph., gr. $\frac{1}{4}$, being injected fifteen minutes before operation.

* Read before the Orleans Parish Medical Society, January 28, 1918. [Received for publication February 11, 1918.—Eds.]

Technic: Pledgets of cotton were introduced into each nasal chamber, being first soaked with cocain hydrochlor., 10 per cent solution, and adrenalin chloride, 1 to 1,000, the excess being expressed. After an interval of fifteen minutes the cotton was removed; the agger-nasi region was then rubbed with swab moistened with the same solution. This swabbing was repeated a few times, the mucosa about the frontal openings, as well as the middle turbinate and the anterior wall of the sphenoid, being similarly anesthetized. A Mosher operation on the ethmoid labyrinth, modified so as to include the removal of the middle turbinate, was now done on the left side, including the removal of the anterior wall of the sphenoid.

The upper septum was next well swabbed with cocain and adrenalin solution. After an interval of ten minutes, in order to block off the nerve supply, one drachm of novocain solution of $\frac{1}{4}$ per cent strength was injected high up into the septum just beneath the frontal sinus floor.

The skin and unshaven eyebrow were cleansed with alcohol and iodin prior to anesthesia. One drachm of $\frac{1}{4}$ per cent solution of novocain was injected beneath the skin of the left eyebrow, about one-quarter inch from its mesial margin, then deeper into the superficial tissue, and finally beneath the periosteum. The supraorbital, supratrochlear, infratrochlear branches were then injected. The entire anesthesia about the frontal sinus externally was done with a single skin puncture, with a two-inch needle, withdrawing the needle just far enough to inject each succeeding area, but not withdrawing it entirely out of the skin.

Incision: A one-inch curved incision was made through the left eyebrow, beginning at the inner margin of the eyebrow and closely following its curve, avoiding injury to the supraorbital nerve, which might result in para-esthesia, or numbness, along its course. The incision was deepened to reach the bone. A Jansen mastoid retractor was placed after elevation of the periosteum. The reason for using this particular retractor, or any mastoid retractor, for that matter, was to secure a bloodless field—a point noted by the writer on former occasions, and which could not be produced by the use of the ordinary eye or hand retractor. Besides this, the aid of an additional assistant is rendered unnecessary, as well as avoiding the unnecessary use of instruments in an already crowded small field of operation. A very small gouge was used to make the

first opening into the sinus at a point corresponding to the usual position of the interfrontal septum, thus rendering later access to the interfrontal septum more easy. The opening was enlarged by means of up-cutting forceps, to an oval about three-quarters inch long at its long diameter. Upon inspection through this opening, polypoid tissue was seen to fill the entire sinus.

A point to be noted here is that, whereas ordinarily it is usual and necessary to apply cocaine to the mucosa of a sinus operated upon under local anesthesia, as, for example, in a Caldwell-Luc operation, in this case it was unnecessary, on account of the successful nerve-blocking. The mucous membrane was curetted without the least evidence of pain on the part of the patient. The next step was to break through the interfrontal septum and enlarge the opening by means of gouge and burr. Following this, the same procedure as on the left sinus was adopted—that is, curettement. Attention was next directed to breaking through the floor of the frontal sinuses and the perpendicular plate of the ethmoid by means of gouge, burrs and rasp (the latter being of the writer's design). A large opening was thus produced leading into the upper nasal cavity, constituting an easy means of approach for subsequent treatment. No post-nasal pack was used, as is customary in a frontal sinus operation under general anesthesia, as the patient was awake and the bleeding from the mucosa was easily controlled by the suction apparatus. The incision was closed as usual, no pack being used for drainage. A tight compress head bandage was applied. The patient was sent back to his room ready for his noonday meal, which he ate with apparently no ill after-effect, no nausea being experienced. In twenty-four hours the outer dressing was removed, as it felt a little tight. On the second day the patient was out in the rolling-chair, as he showed no temperature, nor did any develop subsequently. On the fifth day the sutures were removed, the incision healing by first intention.

In summarizing, the following points are to be noted:

1. No pain was felt by patient at any time during operation.
2. No post-operative nausea was experienced.
3. Patient was up and about earlier than with general anesthesia.
4. On the part of the operator, it was unnecessary to cocaine the frontal sinus mucosa.
5. No post-nasal pack was necessary—a matter of increased comfort for the patient and lessening the danger of middle-ear disease from retained secretion and irritation of the gauze.

6. There was very little reaction about the eyelid.

To the writer's knowledge, this is the first case of frontal sinus operation done under local anesthesia to be reported from this section.

DISCUSSION.

Dr. Dupuy: As I listened to the reading of the paper I could not decide which deserved the greater meed of praise, the art of the surgeon or the Spartan courage of the patient, for the operation is one of the "last words" in frontal sinus surgery and is quite extensive. Doing it under local anesthesia without pain is quite an advancement, and we congratulate the Doctor on the first successful one recorded. I must admit, however, that I fear such an operation can be limited to only a few selective subjects—the Spartan kind. I am willing to try it, however. Dr. Boebinger has failed to emphasize that he has made a very practical contribution in the form of rasps to the instrumentation of the Lothrop operation. The Boebinger rasps are ideal for the work.

Dr. Dimitry: I would like to ask this question: Is a case of frontal sinusitis ever cured by operation? Is the process of drainage sufficient to cure the condition while the diseased mucosa is still left intact? What is the advantage of a local anesthetic from a general anesthesia in these cases?

Dr. Boebinger (in closing): I wish to thank the gentlemen very much for the discussions on my paper, and wish to say that I am indebted to Dr. Dupuy, my chief, for the many opportunities offered me. My object in presenting the paper was to impress upon operators the possibility of local anesthesia in these cases, and not to offer anything new concerning the technic of frontal sinus operation.

In answer to Dr. Dimitry, I do think that we can cure cases of frontal sinusitis. I believe that this will be corroborated by my confrères who are doing frontal sinus operations. I believe also that general anesthesia is objectionable for general reasons, as you expose the patient to ether pneumonia. It is also objectionable where the patient has heart lesion, nephritis, and where ether is contraindicated, and in my opinion it is much better to have your patient comfortable after operation and free from nausea, vomiting, etc. Also, these patients are more or less subject to strangulation by blood flowing into the larynx, which will be especially dangerous when a general anesthetic is used.

RESUMÉ OF HEALTH CONDITIONS OF A MODERN DEPARTMENT STORE.*

By EMILE BLOCH, M. D., New Orleans.

The diseased conditions met with in a modern department store, where many individuals are employed, show a wide variation. The problem encountered in compiling statistics is due to the lack of previous education of the employees on medical lines and the unappreciative value of a complete physical examination.

* Read before the Orleans Parish Medical Society, January 28, 1918. [Received for publication February 11, 1918.—Eds.]

It is a difficult matter to make a female in a department store undergo as complete a physical examination as a male; they object to the least exposure, even so far as a chest examination; they imagine you are endeavoring to pry into their personal affairs, and some look on it as ridiculous to be subjected to such when they are not sick.

Nevertheless, even with such an unfamiliar undertaking, the adversaries have been few and far between.

With the number of employees of Maison Blanche Company, ranging between 1,000 and 1,250 monthly, and having adequately-arranged medical facilities, the conditions met with are more readily brought to hand than in former days.

In passing, I may say that the medical facilities, which include a small hospital ward of six beds, attended by a competent trained nurse, are open to any emergency that may arise to a customer or an employee when in the establishment. Such an arrangement does not exist in any other Southern department store, and no more elaborate arrangement may be found in any establishment in the country.

The following report will show the number of patients treated between September 1, 1916, and November 12, 1917, in Maison Blanche Company, New Orleans, La.:

Number of individual patients.....	869
Office consultations (medical and surgical).....	2,986
Number of major operations.	17
Number of minor operations.	137
Number of male consultants.....	836
Number of female consultants.....	1,938
Number of home and hospital visits.....	984
Physical examination of new members of association.....	342

(Employees required to be employed two months before allowed to become a member.) Of the number examined, 85 had negative examinations—i. e., have not developed any disease.

Report of the nurse in charge (Miss N. Jarvis) from April 20, 1917, to November 12, 1917:

Medical treatment.....	1,018
Surgical treatment.....	543
Minor operations.....	36
Total.....	1,597
Ward patients (employees)	296
Customers in ward from April 3, 1917, to November 10, 1917.....	69

The diseased conditions, and number, are seen in the following table.

Gastro-Intestinal:

Auto-intoxication.	134
Chronic constipation.	34
Dysentery.	—
Mechanical cause.	7
Gastritis (alcoholic).	1
Gastric ulcer.	2
Appendicitis.	14
Operated.	12
Recovered.	11
Died	1
Typhoid fever.	1
Oxyuris (pin-worm).	1

Herniæ:

Inguinal { Indirect, left.	3
{ Indirect, right.	1
{ Direct, right.	1
Ventral, post-operative.	1
Umbilical	2

Respiratory Diseases:

Acute bronchitis.	50
La grippe.	17
Influenza.	—
Acute coryza.	18
Naso-pharyngitis.	21
Trachitis.	5
Pulmonary tuberculosis.	4
Chronic bronchiectasis.	1
Epistaxis.	2
Tonsillitis	19
Pleurisy.	3
Hay fever.	1
Diphtheria.	3

Gynecological:

Retroverted uterus	4
Salpingo-oöphoritis.	5
(Pan-hysterectomy).	1
Endometritis.	15
Vaginitis.	5
Metro- and menorrhagia from ovarian insufficiency.	1
Dysmenorrhea.	58
Amenorrhea.	3
Lacerated perineum.	1
Menopause.	1
Hypertrophied cervix.	1
Lacerated cervix.	2
Uterine polypus (removed)	1
Submucous fibroid (removed vaginally).	1

Infections (Including Furuncles and Carbuncles):

Finger.	27	Abdominal wall	2
Hand.	3	Face (cheek)	5
Forearm.	4	Nose.	3
Arm.	1	Neck (carbuncle)	2
Wrist.	1	Eye (stye)	3
Foot.	1	Gums.	4
Leg.	1	Frontal sinus	2
Knee (skin)	1	Sphenoidal sinus	1
Thigh.	1	Maxillary antrum	3
Buttocks.	1		

Lacerated and Incised Wounds:

Finger.	17	Foot.	2
Thumb.	3	Leg.	2
Hand.	7	Face (cheek)	1
Wrist.	1	Chin.	1
Arm	5		

Contusions:

Foot.	5	Forearm	4
Leg.	1	Elbow.	3
Thigh.	1	Arm.	1
Fingers.	8	Right shoulder	1
Thumb.	4	Orbit.	1
Wrist.	4	Nose.	1
Hand.	1	Forehead.	2

Punctured Wounds:

Nail puncture of foot.	4	Finger (needles)	2
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Sprains:

Shoulder.	1	Thumb	3
Wrist.	2	Ankle.	8
Hand.	1	Knee.	1

Myalgia:

Torticollis	24	Lumbago.	9
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Arthritis:

Acute rheumatic fever; multiple arthritis.	1	Chronic arthritis of knee.	1
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Blood Diseases:

Malaria: Tertian.	3	Secondary anemia	20
Malaria: Estivo-autumna.	1	Myelogenic leukemia	1

Papilloma (Warts).

Finger.	4	Foot	2
Hand.	4	Scalp.	1
General.	1	Nose.	1

Ear Conditions:

Otitis media (acute).	6	Otitis, external (acute)	2
Otitis media (chronic).	1	Otitis, cerumen (ear wax).	4

Mouth Conditions:

Toothache.	20	Stomatitis.	1
Glossitis	5	Pyorrhea alveolaris	1
Epulis.	1		

Eye Condition:

Strabismus.	3	Conjunctivitis.	5
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Skin Diseases:

Pityriasis rosea	1	Scabies.	1
Toxic erythema	2	Herpes: zoster (of face).	1
Pompholyx.	3	Febrilis (fever blisters).	5
Impetigo.	2	Acne.	7
Poison ivy	1		

Bites:

Dog: Face.	1	Human: Finger.	1
Thigh.	1	Insect: Finger.	1
Finger	1		

Foreign Bodies:

Eye.	4	Finger (splinters)	3
Foot.	1	Stomach (pin)	1
Hand (glass)	2		

Headaches:

From eye conditions.	6
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Headaches from gastro-intestinal causes, number not listed, as they were as numerous as said causes.

Burns (All of First and Second Degree):

Wrist.	1	Leg.	1
Hand.	3	Foot.	2
Finger.	4	Forehead.	1
Arm.	1	Face (entire)	1
Elbow.	2		

Thyroid Gland (Enlargement):

Goiter of adolescence.	9	Pathological: Hypertrophic.	1
Pathological: Cystic calcified.	1		

Genito-Urinary Diseases:

Specific acute urethritis.	5	Balanitis.	1
Chronic urethritis	1	Epididymitis.	2
Urinary cystitis.	2	Paraphimosis	1
Hypertrophied prostate	1		

Rectal Diseases.

Anal fissure	1	Hemorrhoids.	5
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Adenitis:

Axillary.	2	Cervical.	1
Inguinal.	2		

Arterial and Cardiac Diseases:

Arterio-sclerosis.	3	Mitral regurgitation	2
Arterial hypertension	5	Apoplexy (cerebral hemorrhage)	1
Aortic regurgitation	3	Angioma (general)	1

Veins:

Varicose veins of leg.	2	Varicocoele.	3
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Nephritis:

Acute parenchymatous	1	Idiopathic.	1
Chronic diffuse	1		

Neuralgia:

Facial.	13	Hand.	1
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Cysts:

Sebaceous: General.	2	Sebaceous: Breast.	1
Chest.	1	Tendon (ganglion)	—
Face.	4	Hand.	1

Curvature of Spine:

Lardosis.	1	Kyphosis.	1
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Fractures:

Phalanx.	—	Old fracture of ascending	
Toe.	1	ramus of ischium.	1

Nervous Diseases:

Multiple sclerosis	1	Neurasthenia and hysteria.	72
Traumatic neurosis	1		
Ingrown toe nails.	3	Coccygeal pain	1
Obesity	2	Tubercular hip.	1
Syphilis, general	7		

Gastro-Intestinal: This condition I have divided under three headings: Auto-intoxication, chronic constipation, and dysentery.

Under auto-intoxication, the symptoms have varied from simple ones accompanying gastritis, following overeating, to severe toxic conditions, with headaches, severe abdominal pains, constipation or diarrhea, nausea and vomiting. Those classed as constipation are chronic conditions; the number listed does not give a correct conception, the regulation of bowel movement in people of such occupation being the foremost factor, though the diet and posture also have some effect. In the cases of dysentery, with diarrhea, as the foremost symptom, food (classed as mechanical) was the cause. Examination of feces for ova and parasites proved negative. Both cases of gastric ulcer were operated by other surgeons; one died following an anterior gastro-enterostomy, the other has completely recovered, following a posterior gastro-enterostomy.

Appendicitis: The number of cases of appendicitis were fourteen. Thirteen were chronic cases, with acute exacerbations. One was a gangrenous appendicitis accompanying a case of myelogenous leukemia. Twelve cases were operated, with one death.

There is just one point which I wish to emphasize—that is, in dealing with so many female patients, ranging in ages from fourteen years up, who suffer from dysmenorrhea due to fibrosis of the ovary and its capsule, proven at the operating table, and also the number of so-called “bellyaches,” it was a difficult matter at times not to make a diagnosis of appendicitis, though with palliative treatment of enemata and careful watching and no purgative, you are able to clear the diagnosis. These are the cases in which temperature and blood pictures in the first twenty-four hours give only slight additional information.

Herniæ: Left, 2; right, 3. Indirect inguinal herniæ operated; all cured. One left indirect and 1 right direct not operated.

Ventral, post-operative, following right rectus incision for appendicitis, operated; cured.

Umbilical herniæ, very small, not operated.

Respiratory Diseases: Acute coryza, acute naso-pharyngitis and acute bronchitis are considered as common ailments where large numbers of people are in such close proximity to each other as in department stores and the condition so contagious. Though I have classified la grippe separately, the offending organism in the majority of these conditions is due to the Pfeiffer bacillus. Also, with the onset of these conditions, the sinuses, frontal, sphenoidal and maxillary antrum must not be overlooked, as may be noticed under the heading of infections.

Pulmonary Tuberculosis: After examining several hundred employees, only four cases of pulmonary tuberculosis have been found—unfortunately for those recognized—but they have found other employment.

Chronic Bronchiectasis: This case was given careful consideration and differentiated from pulmonary tuberculosis. Physical examination showed many cavities, especially in the left lung. No T. B. C. found in several microscopic examinations by others and myself.

Tonsillitis: Again this is a condition very frequently met. The number of enlarged tonsils far exceeds those recorded, and again lies the disputed question whether they should be removed or not.

Diphtheria (Laryngeal): All cases confined by culture and given 10,000 units of antitoxin with good results.

Gynecological Conditions: The gynecological conditions were of slight variation from the usual. I wish only to discuss two conditions—*i. e.*, dysmenorrhea and metro- and menorrhagia, due to ovarian insufficiency. As you see, the cases of dysmenorrhea are many. Constitutional causes, as anemia, etc., were the foremost. These cases responded readily to tonics of arsenic, iron, etc. Other cases did not respond to treatment, and, examination being negative, tended to make me attribute the cause to ovarian fibrosis, as so frequently seen when laparotomized for appendicitis.

Metro- and menorrhagia due to ovarian insufficiency. This case is a girl of twenty-two years, unmarried, had persistent uterine hemorrhages. The use of serum, calcium salts, failed; ovarian

extract, hormotone checked it temporarily. Bi-manual examination revealed nothing abnormal. Uterine scrapings were negative. Laparotomy showed uterus in good position, tubes negative, ovaries very small, capsule thickened. At present patient is being treated with radium, with encouraging progress.

Infections: Of twenty-seven infected fingers, two were deep-seated of terminal phalanx, which showed only one cardinal sign of inflammation—*i. e.*, pain (on pressure). In both cases, crescentic incisions over the tops of the fingers near nail, as recommended by Kanvel, were used with perfect results. Again, the number of sinus infections are noticed, which accounted for patient's respiratory trouble. With proper reference the condition has been rectified.

Lacerated and Incised Wounds; Contusions and Sprains: There is nothing out of the ordinary to be said on these subjects.

Myalgia: The preponderance of stiff-necks is probably due to exposure after leaving a warm store.

Arthritis: The case of acute rheumatic fever has persisted over four months. Several complete physical examinations, every laboratory method, several consultations, X-ray plates of joints, innumerable therapeutic methods, including vaccine-therapy and inability to find the primary focus, has caused the case to be long-drawn-out. Temperature persisted for three months. She is slowly recovering on alkaline and tonic medication.

Blood Diseases: The only blood condition which I wish to dwell upon is anemia. Comparatively speaking, twenty cases are very few, as store-girls have always been considered to be subject to anemia and chlorosis. All diagnoses have been based on hemoglobin readings.

Ear and Mouth Complaints: These small ailments of earache and toothache (from decayed teeth) are every-day matters for the nurse to handle. They are relieved and referred to proper authority.

Headaches: True, this is a symptom rather than a disease, but, it being such a common occurrence, it needs thorough investigation. It is so common that at the onset of a headache an employee readily goes to the nurse in charge for aspirin. We have tried our utmost to discourage such practice and endeavor to get at the fundamental cause. We have had some gratifying results by finding eye trouble and intestinal causes as the primary factors.

Thyroid Glands: In the course of the routine examination the number of goiters of adolescence in girls of ages ranging from four-

teen to twenty years are noticeable. It becomes interesting to see the effects of menstruation and dissipation on the size of the gland. It is also necessary to keep these cases under observation, to see if they will subside or become pathological. These patients, as a rule, are very nervous and high-strung. One of the pathological goiters which I have reference to has undergone calcification and three distinct lobes are palpable. The patient also suffers from menorrhagia, whether any connection from glandular secretion I am unable to say. Patient refuses operation.

Arterial Hypertension: By estimating the blood pressure of adults in the employ, especially the older ones, we have been able to advise some as to their arterial tension. True, high blood pressure for some individuals is compatible with their general circulation, but when it becomes 200 m. m. or more it is time to take precautions.

Cardiac Disease: Of the three aortite regurgitations, two have been anemic murmurs. The other aortic and two mitral murmurs were pathological, but the heart was well compensated.

Angioma: This case was one of general distribution in connection with the general distribution of sebaceous cysts and papilloma.

Nephritis: Of the nephritis, the case of idiopathic origin is of considerable interest. The case history is as follows:

Mr. L. H., age 20; occupation, chauffeur; complaint, none. Cause of consultation, rejection from benevolent association due to presence of albumen in the urine. Past history negative; family history negative; general history negative. Habits: Used tobacco moderately, alcohol (beer) moderately. Present illness. Duration, unknown until one week previous to consultation, when patient was rejected from a benevolent association. He feels healthy in every respect. Physical examination: Heart and lungs negative upon palpation, percussion and auscultation; liver negative on palpation and percussion; spleen not palpable; kidneys palpable, but no abnormalities. Glands: Cervical, epitrochlear and inguinal; palpable, but not enlarged. Wassermann and Tchernow, negative.

September 5, 1917.—Urine, albumen present; negative for sugar; casts, red blood cells and pus cells. On September 11, 1917, and September 14, 1917.

September 21, 1917.—Patient ordered a meat-free diet and no liquors.

October 10, 1917.—No albumen in morning urine; noon urine, 24 per cent albumen.

October 12, 1917.—Discontinued eating eggs, which patient ate daily while at work.

October 13, 1917.—No albumen in morning or in noon specimen of urine.

October 15, 1917.—Allowed to eat eggs (two daily).

October 25, 1917.—No albumen in morning or noon specimen.

October 30, 1917.—Allowed to eat meats. No albumen in morning or noon specimen. Allowed to use alcohol (beer) moderately.

November 2, 1917.—Urine showed traces of albumen; no casts.

Patient never discontinued work.

Diagnosis—Idiopathic nephritis.

Nervous Diseases: Under the heading of nervous diseases, hysterical and neurasthenic individuals are many. Such is to be expected in such an establishment, with so many female employees. Gastro-intestinal disturbances have been found to be a predisposing cause in many cases, but in others the psychic element is the only condition to be found. A diagnosis of hysteria-neurasthenia is a broad assertion, and should never be made before a thorough investigation into the case, but, notwithstanding, in this class of practice these cases are predominant.

REPORT OF A CASE OF PRIMARY INFECTION OF THE SCROTUM BY THE GONOCOCCUS.*

By P. JORDA KAHLE, M. D., New Orleans.

Whether or not cases of primary infection through the skin, such as will be described here, have been reported before, I have been unable to determine, as the time necessary for searching the literature was lacking. However, even if such cases have been reported, I feel that the condition is uncommon enough to be of interest.

We know that the gonococcus can be found elsewhere than in the mucosa of the genito-urinary tract, or as the infecting organism in infections of the rectum and of the conjunctiva, as evidenced by the invasion of other tissues in the form of metastatic abscesses of the skin or of the muscles. Again, we have this organism carried by the blood-streams to almost every part of the body and giving rise to such complications as inflammations of the joints, of the bursæ, of the tendon sheaths, of the muscles, of the pleura, the periosteum, the parotid gland, the iris, the endocardium, and the pericardium. Some authorities claim even that the meninges can be involved. In all of these conditions there is to be found a focus of infection somewhere along the genito-urinary tract and the condition is secondary to it.

It is generally conceded that the unbroken skin cannot be con-

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taminated by the gonococcus and that the squamous type of epithelium offers resistance to gonorrheal infection. The mucosa of the preputial cavity, even, is seldom affected, and, when so, only mildly and in conjunction with an inflammation of the urethra. In such cases treated by me there was only one in which there was no apparent communication between the infected area and the urethra. This case, however, was not free from a gonococcal infection of the urethra, and the small abscess may have been of a metastatic nature. In the case reported to-night, however, it was impossible to demonstrate the gonococcus anywhere except in the lesion for which the patient applied for treatment. For that reason, it appears that we are justified in considering it a case of primary gonorrheal infection of the scrotum.

Mr. E. H. G., age 30; married; residence, Mobile, Ala.; occupation, traveling and clerical.

Past History: Had gonorrhea three years ago. During this attack he had arthritis. A little over a year ago he had another attack of gonorrhea, which lasted three months, and was unattended by any complications. The period of incubation was, as nearly as the patient can remember, about five days. Patient denies syphilis or chancre. Except for yellow fever, the patient has never been sick.

Family History: There is no cancer in the family. Except for one sister, who died of tuberculosis, there are no other cases of this disease in the family.

Present Complaint. There is a sore, which "began eleven weeks ago as a pimple on the bag, at the root of a hair. From this sore there was some corruption which ran out. Gradually the sore spread into the bag and formed a lump." He had been exposed to infection ten days before this condition was noticed. There has been no urethral discharge for at least one year, and, as far as he knows, his wife has no signs of infection. He has had no intercourse with his wife in four months. He has been told that he had a chancre of the scrotum and wants to "be examined and advised." Since being told of his having a chancre he has had "some discomfort in the throat." He has had no temperature, headaches or pains of any kind.

Examination: Patient well nourished and apparently in good health. Throat, skin and lymphatic system negative. Penis normal. No discharge from the urethra. Testicles, epididymes and cords normal. The scrotum, left side, normal; the right side shows a small opening about an inch from the peno-scrotal angle and about an inch and a half from the raphe. From this opening there exudes a scanty secretion, which can be increased on pressure. On palpation there is a large fibrous or sclerotic mass about one and a half by one by three-fourths of an inch in size. This mass is definitely circumscribed, is freely movable in the scrotum, and does not have any apparent communication with the urethra. On the other hand, it is connected and communicates with the surface of the scrotal skin by a band of tissue of the same fibrous or sclerotic consistency. By pressure on the mass a drop of creamy pus can be forced out. Smears made from this secretion show pus and a few Gram negative

diplococci, intracellular. The diplococci were typical of gonococci as to size, form, grouping and staining properties. In spite of a prolonged search for other organisms we were unable to find them, either by simple or by special stains.

As there was no urethral discharge, and the urine voided in two glasses was clear, except for a little mucus, it was centrifuged. The sediment showed a few leucocytes, some mucus, a few colon bacilli, diptheroids and a few Gram positive cocci.

The prostate and vesicles were negative per rectum. After washing out the urethra, anteriorly and posteriorly, the prostate and the vesicles were massaged and the secretion expressed was examined. Except for a few leucocytes the secretion was negative for abnormal elements. No bacteria could be found after a prolonged search.

A No. 26 F. sound was then introduced into the bladder, meeting with no obstruction and causing no inconvenience to the patient. Careful palpation over the sound failed to reveal any fibrous tissue or palpable follicles. The area near the peno-scrotal angle was specially examined.

Cultures from the scrotum were made on blood serum and on plain agar. From these cultures we obtained "a few colonies of staphylococcus aureus and several colonies of a Gram positive spore-bearing bacillus. Both were probably contaminators." We were unable to recover from any of the cultures the diplococcus found in the pus from the scrotum by smears.

Blood taken from the median basilic was submitted to the Wassermann test and to the complement fixation test for gonorrhea. The Wassermann reaction was negative. The complement fixation test for gonorrhea was also negative.

Further observations, as well as a dissection of the scrotal mass, were contemplated, but unfortunately the patient left town before this could be done.

After examining the facts in this case we feel justified in considering it a case of primary infection of the scrotum for the following reasons:

First—The History. Had this condition been a metastatic one it would hardly have begun in the skin at the root of a hair and extended into the scrotum. Rather the reverse would have been true. It would have begun in or under the skin and would have ruptured outside subsequently. Then, again, it would be a peculiar coincidence that this condition should have arisen ten days after illicit intercourse and not sooner or later.

Second. Were this condition metastatic, with a focus in the urethra, or were it an exudate or sclerosis of the subjacent connective tissue as a result of some communication from a focus in the urethra, this communication in all probability could have been made out, or the centrifuged urine would have shown the same organism as found in the pus from the mass in the scrotum.

Third. Were the condition metastatic from a focus in the prostate or the vesicles, we should have found pus and bacteria in the secretions from these organs. It is not claimed, to be sure, that two negative examinations, such as were done in this case, are proof conclusive that the organs in question are free from infection; but, in conjunction with other facts, such, for instance, as the non-recurrence of the gonorrhea in over one year, in spite of intercourse and the use of alcohol, and the failure to infect the wife, following frequent intercourse, we feel that we have strong presumptive evidence that these organs are free from infection.

Fourth. The complement fixation test for gonorrhea was negative. As this test is, if anything, oversensitive because of the nature of the antigen used, a negative reaction seems to be of more significance and would indicate no recent or present gonorrhea, except such as might be local and which had not yet caused any resistance on the part of the patient. Again, should this condition have been metastatic, we would have to assume, as there was no communication with the urethra, that the blood current had conveyed the gonococcus. In such a case, it were hardly probable that the complement fixation test should have been negative.

Fifth. The gonococcus, when it invades connective tissue, excites exudation and sclerosis. In view of the fact that the mass found in the scrotum was sclerotic and that the pus taken from it showed no other organisms than those which in size, shape, grouping and staining properties were typical of gonococci; in view of the fact that, in the long period during which the condition has existed (eleven weeks), there were at no time pain, temperature, profuse discharge or glandular involvement, or any other signs, such as usually accompany infections by the ordinary pyogenic bacteria, we can assume, properly, that the diplococcus found was the gonococcus.

Sixth. This would in large part be borne out by the cultures made. Although we were unable to obtain a culture of the gonococcus on the Loeffler's blood serum, we were unable to recover from the plain agar or from the blood serum the bacterium we demonstrated in the pus. On the plain agar the colonies of *Staphylococcus aureus* and the Gram positive spore-bearing bacillus were few, and had not been found in the smears. We therefore concluded that they were contaminators.

I wish to express my indebtedness to Dr. Abe Mattes for his col-

laboration in the examining of this case and for his valuable services in conjunction with the bacteriological work.

DISCUSSION.

Dr. Chalaron: In my opinion, the fact that the complement fixation was negative is the strongest indication of primary gonorrhea and not of metastasis. This is a very interesting report, and the possibility of such a rare infection might be explained by the breaking down of the horny layer of the skin, which allowed the passage of the gonococcus into the tissue beneath.

Dr. Johns: I remember a case occurring in Dr. Hume's practice—a gonorrheal infection appearing in the middle portion of the penis. The bacteria from the ulcer were grown and positively identified.

Dr. Kahle (in closing): From the history of the case, after close questioning, I was unable to obtain a history of a breach in the skin at the time of intercourse.

PROCEEDINGS ORLEANS PARISH MEDICAL SOCIETY

ANNUAL MEETING, JANUARY 14, 1918.

REPORT OF THE PRESIDENT, ORLEANS PARISH MEDICAL SOCIETY, FOR THE YEAR 1917.*

By PAUL GELPI, M. D, New Orleans.

On this annual occasion it is customary for the retiring President to present his report and the President-elect to deliver an address. But in view of your having conferred upon me, for the second time, the highest honor in your gift, the dual function falls to me. I cannot find adequate words to express my deep sense of appreciation, and in thanking you for the honor I want to assure you that I will do all in my power to justify your confidence and exert my every effort to promote the welfare and advancement of our Society.

A year ago I concluded my address by saying: "The seasons will follow swiftly and a twelvemonth will soon pass by, and then you will ask of me an account of my stewardship." I added that the achievements of the year would only be a reflection of what you individually and collectively had done to assist in the work. I am happy to state that this has been a constructive year, thanks to the good team-work not only of those in close touch with the administration, but also of the general membership.

The total membership for the year was 360—the largest in our

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history. Owing to resignations and other causes, we begin the year with a membership of 335.

Our bonded indebtedness has been reduced to the extent of \$3,300. We were enabled to accomplish this through the great success of our Library Fund Concert, and our books show for the first time a healthy balance. We still have outstanding bonds to the value of \$16,500. One of our colleagues has evolved an elaborate plan by means of which he expects to extinguish this debt, and in the course of the year the matter will be submitted for your consideration.

The Society is now in possession of a complete catalogue of all books and periodicals in the library. For this valuable asset we are indebted to our painstaking and efficient librarian, Dr. Chaillé Jamison, who worked assiduously to complete the task before his departure for the front.

I wish to take this opportunity of expressing to your Board of Directors my thanks and gratitude for their valuable assistance. They have been untiring in their efforts, and by their faithfulness, energy and active coöperation have placed the affairs of the Society on a sound business basis. The divorcing of scientific and business sessions necessarily thrust additional work upon them, and they met the condition by organizing into active committees to take complete charge of the management of the Society.

It is not my purpose to enumerate all the questions on which the Board has been called upon to act, but the following are deserving of special mention: Two sets of rules were adopted, one defining the functions of the assistant secretary librarian, the other regulating the workings of the library. The latter have appeared severe to some of our members, but the Board deemed it the best expedient to meet conditions and best calculated to carry out the instructions of the Society to absolutely prevent a repetition of the acts of vandalism which caused such a stir not very long ago.

The librarian was authorized to purchase books on military medicine and United States military requirements.

The Board took a definite stand regarding the exhibition of such pictures as "Twilight Sleep." An attempt was made to stop the showing of this misleading picture, but it failed, because there is no existing law to cover this question.

An important ruling was taken as to the publication of members' portraits in the lay press. It was declared to be against professional ethics except under extraordinary circumstances.

With a view to economy, a duplicating machine was purchased,

which has already saved a considerable amount of money to the Society.

The question of the publication of authors' titles, other than scientific, was taken up. After thorough investigation the Board recommended that the matter should be left to the option of the writer, and it was so written in our contract with our official organ.

The Board has taken a great interest in the movement to induce the Louisiana Medical Society to designate the domicile of our Society as its headquarters. For well-known reasons the movement failed. But the Society is practically of one mind on the subject, and recently, for the third time, voted in favor of the arrangement. The Board believes that this would be of advantage to both bodies and to organized medicine in general, and confidently hopes that the matter will be brought to a successful issue.

Since the beginning of the war the Society has adopted various measures. At a general meeting it unanimously pledged itself to support President Wilson in his declaration of war against Germany. Later, resolutions were passed endorsing the conscription bill, and the services of the Society were officially offered to assist in the examination of conscripts. There were four special meetings on medical war questions. Three meetings were held to hear Capt. Thomas C. Austin, U. S. A., speak on war and military medical topics. The fourth was an aviation meeting, at which Major Isaac W. Jones, U. S. A., was the speaker.

Resolutions were passed asking the United States Government to assume control of the manufacture of salvarsan and neosalvarsan.

The Society unanimously voted to remit the dues of all members who went to the front.

At an enthusiastic meeting it was unanimously decided to raise a large service flag in honor of our members who had joined the army.

In connection with the war, the Society decided to organize a special committee, known as "the Medical Archives Committee," whose function is to keep in touch with our members at the front and to preserve a record of all **communications and news** referring to them.

Among the committees appointed during the year, the most important were the following: On "Criminal Abortion and Midwifery" on "Workmen's Compensation Law," and on "Members in Distress." It is hoped that the first two committees will report at an early date, in view of the fact that the Louisiana Legislature

will soon be in session. We should certainly give our consideration to these subjects and be prepared to furnish information regarding them.

The Delgado Memorial Committee has finished its labors by the purchase of a painting for the Delgado Museum. They made a happy and fitting selection of a picture, "Lotus," from the brush of one of our best-known artists, Mr. Elsworth Woodward.

We have had to deplore the loss by death of two of our most esteemed members—Dr. W. T. O'Reilly and Dr. M. Thomas Lanaux.

I want to thank Dr. Lucien Landry for his unflagging interest and energy in the preparation of the scientific programs. The work presented was generally of a high character.

The work of the assistant secretary librarian was very satisfactory and his monthly reports to the Board showed evidence of his desire to conserve the best interests of the Society.

I will conclude with a few recommendations. The Committee on Scientific Essays represents, as last year, the different branches of medicine. I would recommend that they work together. It strikes me that the work of the committee should not fall on the shoulders of one man and that more interesting programs could be gotten up if all the members participated.

After a year's experience I wish to strongly recommend that in the near future the members of the Board of Directors be elected for one, two and three years, respectively. The advantage of having members of the Board who had served past administrations was repeatedly recognized. This familiarity with past conditions proved very helpful in many instances.

Finally, I wish to call your attention to the Owen Bill, which is an amendment to the Army and Navy Medical Defense Act. The object of this amendment is to obtain proper recognition of the Medical Reserve and Medical Corps of the Army and Navy, fixing the rate of Army and Navy medical officers and creating ranks corresponding to the other high grades in the Army and Navy.

In order to secure the passage of this act it is imperative not only that the members of the medical profession individually urge their Senators and Representatives to vote for it, but also that the Orleans Parish Medical Society as a body use its influence in the same direction.

The entrance of our great country into the world-war, for the grand and inspiring cause of humanity and democracy, has furnished

us with new problems. A number of our members, with the true spirit of loyalty, courage and patriotism, have gladly given their services to the nation. In consequence, our ranks have been diminished and our financial resources curtailed. As more of our members are called to the colors, conditions will become more acute, and it will be our duty to maintain and preserve the Orleans Parish Medical Society. I feel confident that those who remain at home will rise equal to the occasion, and with true patriotism, professional pride and brotherly feeling will help to tide over the difficulties which may present themselves.

ADDRESS ON WAR SAVINGS.*

By MR. LYNN H. DINKINS, New Orleans.

It rather seems as if we might properly, but roughly, divide the war savings appeal for the support of the citizenship of the United States into three classifications. The order in which I expect to bring them to your attention does not, in my opinion, represent satisfactorily the degree of importance to which each classification is entitled, because it is more than likely that, in its ultimate effect, the intangible factors which may come about as a result of our efforts in the third classification will more than counter-weigh all of the immediate, actual and material advantages which this country and our Allies expect to receive by closely following the suggestions contained in the first two classifications.

Now, in the first place, it is obvious to all that, in order to carry on the war, it is necessary for the government to be provided with abundant financial resources. Heretofore in our history it has only been possible to provide these resources in two ways: First, by taxation; second, by the issue of bonds or certificates of indebtedness. Perhaps this statement should be modified to some extent, on account of the small net revenues derived from the sale of public lands and from the operations of the Postoffice Department. In the recent past our government has taken over the management of our railroads, and it is not unlikely that, under a unified plan of operation, it will derive some net income as a result of this departure. Later on, if the war continues, it may be necessary for it to take over the operation of various manufacturing enterprises. I believe, however, that, even under the most favorable circumstances,

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the government must rely on receiving its revenues, for the most part from the two sources mentioned—that is, from taxation and from the sale of bonds and certificates of indebtedness.

Usually the certificates of indebtedness issued by the Treasury Department have been purchased only by banks and large corporations, and we are now, I think, for the first time offered an opportunity to purchase such evidences of debt in small amounts. This supplying of the government with money with which to prosecute the war is a very important feature of the War Savings Stamp campaign.

Another thing which the government needs quite as much as it does money is service. The capacity of any one to render service is, of course, limited. We cannot successfully practice medicine, dig trenches, build ships, mine coal and, at the same time, manufacture fur coats, make jewelry and other unnecessary articles which we use for the purpose only of adorning ourselves. During the progress of the war we need to dedicate our services to such ends as will bring about its speedy termination.

One of the incidents of every war is expansion, and I do not think it is necessary for one to cite the reasons for this condition before an audience of Orleans Parish physicians. Expansion carries in its train increased wages, and the employee who suddenly finds his income increased by from 25 to 200 per cent is more than apt to purchase luxuries or unnecessary things. Such action on his part injuriously affects the nation in two ways: First, we lose the use of such money as he wastes; and, secondly, his purchase makes a market for unnecessary articles, insuring the continuance of their production; and since, in order to produce them, service is required, our government, through this misdirected expenditure of the increased wage, suffers from the undesirable diversion of both money and services.

The third classification is somewhat intangible and I am not entirely sure that I can successfully present it so as to impress a company of physicians and surgeons. You men deal with facts, and you will not accept a verdict until its correctness has been abundantly proven as the result of many experiments. One of your greatest associates, to whose memory civilization itself should stand with uncovered head, found it very difficult to convince London that the cause of surgical healing would be immeasurably benefited by the use of his new methods of treatment. His long residence in Edinburgh and Glasgow had converted Scotland, but

for many months the greatest city in the world withheld its approval. In spite of the knowledge of this mental trend, I want to ask your attention for a moment to the psychology of *thrift* and the sociology of *savings*. The war in which we are now engaged is not entirely a conflict between nations. It is, in many respects, a war of humanity against despotism, and its issue may decide the character of the future government of mankind.

Suppose that during this tremendous period of changing conditions we form habits of extravagance, made possible by increased earnings, and that we lay aside nothing for a "rainy day"? When the war ends, as end it must, expansion almost automatically stops, and, instead of scarcity of service, we have a surplus—wages must inevitably decline. Material and products will also decline, but not in the same proportion as wages. In view of what happened in France about one hundred years ago, and in view of what has taken place in Russia during the past few months, I ask you to consider whether or not any movement to conserve the prosperity of the average citizen of our country is not worthy of your best efforts?

MISCELLANY

COLD-PACK CANNING AND BOTULISM.

The United States Department of Agriculture authorizes the following statement:

"Botulism, often called sausage poisoning, is a specific intoxication brought about by an organism isolated by Van Ermengen from insufficiently cooked sausages which had caused a severe outbreak of food poisoning in Belgium in 1895. The symptoms (nausea, gastric pains, visual disturbances, muscular weakness, etc.) are caused by a definite toxin or poison produced by the *Bacillus botulinus* outside of the body.

"The bacillus is an anaërobic organism. It grows readily at 20° to 25° C., but only sparingly at 37°, and there is no conclusive evidence that it produces its toxin to any extent in the digestive tract. It does grow readily and produces its toxin in protein foods, such as meat or fish. Some investigators state that it also produces its toxin readily in protein-containing vegetables like peas, beans and corn. When growing in these foods, the organism produces a very powerful poison, causing the symptoms mentioned above, or

even death, when eaten in extremely small amounts. Fortunately, cases of botulism are not common in this country.

"The *Bacillus botulinus* is spore-forming, but both the organism and its spores are not very resistant to heat. The toxin is also destroyed by boiling. Thorough cooking at the boiling temperature is all that is necessary to kill the organism and destroy its toxin, and cases of botulism are due to the eating of infected food and which has not been sufficiently cooked. Sausages present ideal conditions for the growth, and have been a frequent cause of botulism, hence the name of the disease."

"There is no danger that botulism will result from eating fruits or vegetables which have been canned by any of the methods recommended by the United States Department of Agriculture. No canned goods are to be eaten which show signs of spoilage. In case of doubt as to the contents of a particular can, it must be thrown away. If fed to animals it should be boiled. In the cold-pack method of canning given out by the Department of Agriculture, only fresh vegetables are recommended, and sterilization is accomplished as follows: Cleansing, blanching, cold-dipping, packing in clean, hot jars, adding boiling water, sealing immediately, and then sterilizing the sealed jars at a minimum temperature of 212° F. for one to four hours, according to the character of the material. Since the spores of *Bacillus botulinus* are killed by heating for one hour at 175°, there is no reason to believe that the organism will survive such treatment.

The *Bacillus botulinus* has been found in the digestive tracts of some animals, especially the pig and the fowl, probably occurring there in the same manner as does that of tetanus (lockjaw) in the intestinal tract of the horse. It is not a parasite, in the ordinary sense, but rather a saprophyte. From these sources it may be deposited on the soil, although attempts at isolating it from the soil have generally given negative results."

CURRENT LITERATURE

GUNSHOT WOUNDS OF THE LUNGS AND PLEURA.—*Surgery, Gynecology and Obstetrics*, Vol. XXV, No. 6.—The following general conclusions may be stated (Sir Berkeley Monohan, C. B., Leeds, England):

1. The approximate mortality from gunshot wounds of the chest at all parts of the line of communication is 20 per cent.

2. The causes of death are hemorrhage, as a rule within twenty-eight hours, and sepsis after the third or fourth day.

3. The local conditions in wounds of the chest wall and lung are in all respects similar to those met with in wounds elsewhere. The missiles are the same, their destructive effects upon the tissues are the same, and the infecting organism are the same.

4. The lung tissue is more resistant to attack than many other tissues. The opening of the pleural cavity and the resulting exposure of a large serous sac to infection and all its consequences, add, however, a danger of the most threatening character.

5. The chief essential in the treatment of all cases of penetrating wounds of the chest is rest.

6. In clean, perforating wounds of the chest, rest, together with the cleansing and dressing of the wound of entrance or exit, will lead to the recovery of the great majority of cases.

7. In cases of "open thorax," the earliest and most complete effort possible must be made to secure closure of the wound after an appropriate toilet.

8. In those rare cases of hemorrhage, when hemoptysis is present or when the blood escapes the wound, a direct access to the source of the bleeding must be obtained, when all contingent circumstances permit, and the wound in the lung must be treated by suture preferably, or by plugging of the cavity from which the blood escapes.

9. In cases of hemothorax, when the blood effused is small in quantity and remains sterile, no active measures are necessary, unless absorption is long delayed. Aspiration, repeated if necessary, may then be performed.

10. In cases of hemothorax, when the blood effused is large in amount and remains sterile, aspiration after the seventh or eighth day, or earlier in cases of urgent dyspnea, certainly hastens convalescence, permits a more rapid expansion of the lung, and prevents the formation of firm adhesion, which may permanently cripple free movements of the lung.

11. In cases of hemothorax, whether the amount of blood is small or large, when the infection takes place, open operation is necessary. Early operation, both when the Carrel-Dakin technic or Morrison method is adopted, saves many weeks of convalescence and permits of a more perfect functional recovery.

12. Small foreign bodies, rifle bullets, imbedded in the lung,

often cause no symptoms; they become encapsulated and may safely be left.

13. Larger foreign bodies retained in the lung may cause distressing or disabling symptoms for long periods. In all such cases removal after resection or elevation of the fourth rib through an anterior incision will allow of the safe removal of the projectile from any part of the lung. Pieces of metal removed are almost always infected.

ISIDORE COHN.

POST-OPERATIVE PULMONARY COMPLICATIONS.—*Surgery, Gynecology and Obstetrics*, Vol. XXV, No. 6.—The predisposing factors are (Cutler and Morton):

1. Poor general condition—*i. e.*, age, anemia, alcoholism, arteriosclerosis, weak heart or susceptible lungs. (The type that appears superficially as a bad pre-operative risk.)

2. Oral sepsis—*i. e.*, teeth carious, necrotic, etc.; tonsils septic.

3. Preëxisting lung pathology, not only tuberculosis, but bronchitis, emphysema, recently subsided pneumonia.

4. Anesthetic badly given—*i. e.*, forced aspiration of mucus permitted: unnecessary intubation of nasopharynx, vomiting table, etc.

5. The presence of septic foci.

6. Too radical operations that open up, unnecessarily, pathways to the neighborhood of the lungs or to the lungs themselves.

7. Operations in the epigastrium carry the added danger of lung complications through ease of vascular and lymphatic extension.

8. Exposure to cooling fluids or to draughts (vasomotor disturbance).

9. Post-operative pain, resulting in hypostasis from poor expansion.

Prophylactic measures which we suggest to avoid the occurrence of post-operative pulmonary complications:

1. Careful preparation of the mouth; all oral sepsis from teeth and tonsils eradicated; antiseptic mouth-wash and extra careful brushing of the teeth the day of operation. Turner emphasizes the importance of mechanical scrubbing of the mouth with citric acid, the mere uses of mouth-washes being insufficient.

2. Observation of patient for at least two days before operation, to insure absence pathology and septic foci.

3. Carefully administered anesthetic, preferably in the hands of an expert; ether to be given by the drop method. Avoidance of mechanical appliances in mouth and nose, unless indicated. Surgeon to be ready to operate when the patient is prepared.

4. Avoidance of exposure during preparation on the table; no unnecessary petting; plenty of blankets. Again, after operation, particular care to avoid exposure, plenty of blankets, and if the patient is recumbent, these to be pinned about the neck. Operating room temperature above 75° F. The liberal use of hot packs in laparotomies in walling-off the operative field.

5. Avoidance of trauma, especially in the epigastrium and in the neighborhood of large vessels.

6. Asepsis.

ISIDORE COHN.

NEWS AND COMMENT

AMERICAN PROCTOLOGIC SOCIETY.—The twentieth annual meeting of the American Proctologic Society will be held in Chicago, June 10-11, 1918, under the presidency of Dr. Jerome M. Lynch, New York.

AN APPEAL TO THE PRESIDENT.—At the annual meeting of the National Institute of Social Science, January 18, the following resolution was adopted: "Resolved, That the President of the United States be urged to institute adequate measures for the conservation of the health and the promotion of the physical efficiency of the nation during the period of the war."

HEROIN AN UNNECESSARY DRUG.—According to the opinion of Dr. Chas. F. Stokes, former physician in charge of the New York City Colony Farm at Warwick, N. Y., in his testimony before a legislative committee investigating the drug evil, the medical profession could do without heroin and the manufacture of this drug should be stopped.

PLAGUE IN CHINA.—Appeals for help are being sent broadcast by American doctors who recently went into the Shansi Province, China, to investigate a pneumonia type of plague prevalent there.

RAILROAD HOSPITAL CAR.—The first National Army hospital car, which has been designed and standardized by the mechanical department of the Erie Railroad from the suggestion of Dr. David Orr Edson, of New York, will be used to transport sick soldiers from the various cantonments to the base hospitals. Seven two-story cots on each side, regular hospital equipment and provision for doctors and nurses make up the main portions of the car.

THE ROCKEFELLER FOUNDATION PLANS.—The Rockefeller Foundation budget for 1918 plans to spend \$10,000,000 devoting itself

largely to the two allied fields of work: first, the promotion of public health; second, the advancement of medical education. At present, on account of the war, the Foundation is devoting a large part of its resources to war relief, to work for the welfare of American soldiers, and to other work in connection with the emergency.

FREE MEDICAL ATTENDANCE.—Great Britain has created a new cabinet office, that of Minister of Public Health, appointing Sir Christopher Addison, the noted anatomist and publicist, as its first occupant. This points to the possibility of the nationalization of the medical profession, with free medical attendance on all without charge.

CHILD WELFARE ASSOCIATIONS MEET.—On January 25, 1918, representatives of the American and British Associations for the study and Prevention of Infant Mortality met in New York City. Outlines of the child welfare work done in this country and in the British Isles were presented by Julia Lathrop, of the Children's Bureau at Washington; Dr. Edward Clark and Dr. S. Josephine Baker, of the Bureau of Child Hygiene of the New York Department of Health; Dr. Morris Slemmons, of Yale, and the Countess of Aberdeen, of Scotland. Mrs. William Lowell Putnam, president of the American Association, presided at the meeting.

VETERINARY SURGEONS RECOMMEND HORSE MEAT.—At a conference in the New York Veterinary College, the veterinary surgeons of New York, Connecticut, New Jersey and Massachusetts adopted a resolution calling upon Congress to appropriate immediately \$100,000 to establish the inspection of horse meat. According to their view, a great number of horses and ponies on the Western ranges can be made available for food.

TELESCOPES FOR THE NAVY.—An appeal has come from the Navy, through Mr. Franklin D. Roosevelt, Assistant Secretary of the Navy, for the loan of binoculars, spyglasses and telescopes. A record will be kept of the loan, which will be returned to the owners at the end of the war, and the sum of one dollar will be paid to each person from whom the glasses are borrowed, since the government cannot accept material or services without remuneration. Glasses should be forwarded either by mail or express, to Mr. Franklin D. Roosevelt, Assistant Secretary of the Navy, Naval Observatory, Washington, D. C., and each glass should be carefully tagged with the name and address of the owner. Those which are not suitable for naval use will be returned to the sender.

CAMPAIGN FOR NEW MEMBERS.—The National Association for the Study and Prevention of Tuberculosis has now a member-

ship of 2,500, and it is the purpose of the association to increase this membership. To this end a campaign has been started to secure 5,000 new members. The States of the Union have been apportioned and the number of new members to be secured assigned to each. The allotment of some States is as low as ten, others as high as 450. The coöperation of local and State tuberculosis organizations has been enlisted.

CANCER CONTROL.—The American Society for the Control of Cancer has issued its January bulletin reviewing the work of the year 1917. In view of the devastation of life on account of war, the executive committee of the society has decided to push its work more vigorously than ever and a war program has been outlined and approved. Action by State medical societies in appointing special cancer committees, the securing of laboratory diagnosis of suspected specimens, the holding of special meetings of county societies devoted to cancer, the cancer editions of State and local medical publications, the enlistment of State and city boards of health, nurses, women's clubs, the holding of public meetings, etc., are included in the program of the society.

SCHOOL OF HYGIENE AND PUBLIC HEALTH.—The Johns Hopkins University, through the coöperation of the Rockefeller Foundation, will open a school of hygiene and public health in October, 1918. Drs. Wm. H. Welch and Wm. H. Howell will direct the organization. New buildings and laboratories are being erected, and it is hoped to have one of the main buildings ready for the opening of October. The laboratories will be provided, for the present, elsewhere in the university. The degree of Doctor of Public Health will be granted.

INFORMATION WANTED ON XEROSTOMIA.—Dr. Herman Prinz, of the Thomas Evans Dental Institute, University of Pennsylvania, Philadelphia, wishes to enter into communication with physicians who have had cases of xerostomia (dry mouth) under observation.

THE WEST AND THE PHYSICALLY FIT.—South Dakota has the distinction of having the highest percentage of drafted men "physically fit" for service than any other State. Pennsylvania stands at the other end of the list. Of the group of States, thirteen in number, standing second in the percentage list, all but one, Alabama, are in the Middle West, constituting a solid belt from north to south, except for Colorado and New Mexico, which fall in the third group of twenty or more States.

JOURNAL DISCONTINUES.—The *St. Paul Medical Journal* has

been discontinued in order to clear the field for *Minnesota Medicine*, the Journal of the Minnesota State Medical Association, affiliated with the bureau of the American Medical Association.

NATIONAL CHILD WELFARE CAMPAIGN.—A nation-wide campaign, to be continued one year from April 6, 1918, to save one hundred thousand children in this country, has been inaugurated by the Children's Bureau of the United States Department of Labor, Washington, D. C. Each State will be assigned a definite quota of the one hundred thousand lives to save. The methods of work will be those which have already proved efficient in saving children's lives in the United States and other countries. Dr. F. Truby King, who is the active head of the Children's Health Society in New Zealand, which has the highest birth rate and the lowest death rate among infants, will assist in the campaign.

THE COMMON SODA WATER GLASS MUST GO.—According to the views of investigators of public health, the soda water glass has greater possibilities for evil than the public drinking cup and should be abolished. Dr. Tanza, of the United States Public Health Service, believes that the dirty soda fountain has a great deal to answer for in connection with the spread of tuberculosis. He has frequently seen men and women in the advanced stages of consumption drinking at soda fountains, where no effort was made to cleanse the glasses and other utensils beyond a hurried rinsing in standing water.

CALIFORNIA'S MEDICAL LICENSE ACT.—The United States Supreme Court has declared constitutional the California Medical Practice Act, providing for licensing and regulating persons engaged in healing the sick.

REMOVALS.—Dr. Clyde C. Thompson, from Oak Grove to Delhi, La.

Dr. Walter Brem, from 1209 Brockman Building to 932 Maltman avenue, Los Angeles, Cal.

Dr. A. L. Peters, from Jonesboro to McNary, La.

Dr. M. L. Matthews, from Cameron to Sanford, N. C.

PERSONALS.—Dr. Henry Beech Carre, formerly of New Orleans, but now of Vanderbilt University, will leave shortly for France to enter army Y. M. C. A. work.

Capt. Wm. M. Perkins, M. R. C. (New Orleans), after taking a course in brain surgery in New York, visited the city during the past month on his way to Camp Travis, Texas.

Dr. Sidney K. Simon (New Orleans) is acting secretary-treasurer

of the American Society of Tropical Medicine during the absence of Dr. John M. Swan, who is serving on war duty "somewhere in France."

MARRIED.—On January 12, 1918, Dr. Howard Clay Sevier, of Tallulah, La., to Miss Clyde Kell Scott, of Vicksburg, Miss.

BOOK REVIEWS AND NOTICES

Man—An Adaptive Mechanism, by George W. Crile, F. A. C. S. Edited by Annette Austin, A. B. The McMillan Company, New York.

The philosophy of living, at best, affords large fields for conjecture. Any angle which offers an approach to a reason for our present being must be of interest. The study of comparative phases of living matter in its ascent to man brings out the essentials of life all along the trail, and to these have attached the more subtle diversifications which have separated the human from congener mammalian types. As the finer instrument responds to the more sensitive motives, so man functions in ways which have their influence in a coördinated or an involved organ, or group of organs, in which the elements of control would seem to be. The human individual varying from the normal may show exaggerated evidences of the jangled mechanism. The development of the control and the regulation of the adaptive resistance is the conclusion of the author's theory. Many of us have probably thought about much of the idea which the author has put forth, but it is good to have the assembling of such material for reflection. We have so far to go that such side lights should be welcome.

DYER.

Personal Health, by Wm. Brady, M. D. W. B. Saunders & Co., Philadelphia and London.

A large amount of information in small compass and presented in terms easily understood. Sensible suggestions are plentiful, and the material service of the book must find a place in aiding to educate the general public, for which the compilation is chiefly intended.

DYER.

Pulmonary Tuberculosis, by Edward O. Otis, M. D. W. M. Leonard, London.

As a teacher of the subject of tuberculosis for many years, the author has the basis for a presentation of his subject, which is in evidence throughout the text. The means and way of diagnosis are given, and the particular, careful points to be reckoned in obscure cases. The treatment is reviewed and the care of the tubercular subject is emphasized. Well-selected illustrations are found throughout the book.

DYER.

The Healthy Marriage, by G. T. Wrench, M. D., B. S. (London). Second edition. Paul B. Hoeber, New York.

There is a refreshing frankness in this little book, which perhaps will be of more service to mothers and fathers than to the uninitiated. The school of experience is still so largely attended that it can hardly be expected to disappear until marriage is a legal and not a psychologic process. Many like books have been written, and more will appear as the

occasional earnest physician feels the call for recording his experience. Meantime all such contributions will help in the end—by making for a more consistent public mind.

DYER.

Hughes' Practice of Medicine. Eleventh edition, revised and enlarged, by R. J. E. Scott, M. A., B. C. L., M. D. P. Blakiston's Son & Co., Philadelphia.

There will always be a demand for such a compendary, where a practical, modern and brief presentation of diseases is given for the easy reference of the busy practitioner. There has never been any pretense to a cyclopedic function in "Hughes," which speaks for its continued usefulness. The careful revision of each new edition, keeping the material current with the times, should continue the popularity of the book.

DYER.

Practical Materia Medica and Prescription Writing, by Oscar W. Bethea, M. D., Ph. G., F. C. A. Second revised edition. F. A. Davis Company, Philadelphia.

It must be gratifying to the author and a satisfaction to the publishers to acknowledge a demand for a second edition of a textbook within two years after the first appearance of the work. The popularity of this text, however, and its wide adoption for student use at a large number of medical schools, has made it necessary to make the content thoroughly up-to-date. The practical character of the book, in its arrangement and method of presenting the material, is apparent at the first glance. Its ready usefulness, then, for student and practitioner, must continue the demand for the publication. No change in form of the material has been made in the second edition—only such additions and revisions as have been necessary in adapting the text to the U. S. Pharmacopeia.

DYER.

Physical Exercises for Invalids and Convalescents, by Edward H. Ochsner, B. S., M. D., F. A. C. S. C. V. Mosby Company, St. Louis.

The illustrations really make this little monograph a valuable contribution to the efficiency of the modern equipment of the physician who takes good care of his patients. The graphic and practical presentation of each exercise make them a guide for the patient himself, and, as such, it may be entrusted to him. As a matter of fact, as shown, the exercises might form a part of the daily routine of the most of doctors themselves, although we should hesitate to recommend all of the exercises given, as this would make a rather pretentious program.

DYER.

Impotency, Sterility and Artificial Impregnation, by Frank P. Davis, Ph. B., M. D. C. V. Mosby, St. Louis.

This monograph contains an assemblage of ideas derived from miscellaneous sources, with more or less discussion relating to the topics which give the book its title. The material has a certain interest for those who may be curious, but there is little of therapeutic or other value outside the suggestions applying to the relief of remediable impotency. The chapter on artificial impregnation has much which might have been omitted to the advantage of the book and the reader.

DYER.

PUBLICATIONS RECEIVED

LEA & FEBIGER, Philadelphia and New York, 1917.

Medical War Manual No. 3. Military Ophthalmic Surgery, by Allen Greenwood, M. D., G. E. de Schweinitz, M. D., and Walter R. Parker, M. D.

Medical War Manual No. 4. Military Orthopedic Surgery. Prepared by the Orthopedic Council.

WILLIAM WOOD & CO., New York, 1918.

State Board Examination Questions and Answers of the United States and Canada. Fifth edition.

P. BLAKISTON'S SON & CO., Philadelphia, 1917.

A Compend of Bacteriology, Including Pathogenic Protozoa, by Robert L. Pitfield, M. D. Third edition.

WASHINGTON GOVERNMENT PRINTING OFFICE, Washington, D. C., 1917.

United States Naval Medical Bulletin, January, 1918 (quarterly).

Public Health Reports. Vol. 32, No. 52; Vol. 33, Nos. 1, 2, 3, 4, 5, 6.

United States Official Postal Guide (Supplement). (Postoffice Department.)

Hay Fever: Its Cause and Prevention in the Rocky Mountain and Pacific States, by William Scheppegegrell, A. M., M. D.

Report of the Chemist. (U. S. Department of Agriculture, Bureau of Chemistry.)

MISCELLANEOUS.

Proceedings of the Eleventh Annual Meeting of the Association of Life Insurance Presidents. (New York, 1917.)

The Institution Quarterly. December 31, 1917. (Springfield, Ill.)

Commercialized Prostitution in New York City. November 1, 1917.

A Comparison Between 1912, 1915, 1916 and 1917. (Bureau of Social Hygiene, 61 Broadway, New York City.)

The Diagnosis and Treatment of Cerebrospinal Fever With Antimeningitis Serum and Accessories. (H. K. Mulford Co., Philadelphia.)

Quarterly Bulletin Louisiana State Board of Health. New Orleans, December, 1917.

Supplement to Quarterly Bulletin Louisiana State Board of Health. (Official Registration of Physicians, Midwives, Dentists, Embalmers, Undertakers and Nurses.) Corrected to December 26, 1917, inclusive.

REPRINTS.

Hay Fever and Hay Fever Pollens; Hay Fever and Its Relation to One Hundred of the Most Common Plants, Trees and Grasses, by William Scheppegegrell, A. M., M. D.

Seven-Day Fever in the Anglo-Egyptian Sudan, by Capt. R. G. Archibald, M. B., D. S. O., R. A. M. C.

Espundia in the Anglo-Egyptian Sudan, by Yusbashi (Captain) B. J. Susu, M. D.

A Sudanese Dermatitis Venenata, by Albert J. Chalmers and Waino Pekkola.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for January, 1918.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	2	—	2
Intermittent Fever (Malarial Cachexia)	—	—	—
Smallpox	—	—	—
Measles	—	—	—
Scarlet Fever	—	—	—
Whooping Cough	1	—	1
Diphtheria and Croup	3	1	4
Influenza	23	17	40
Cholera Nostras	—	—	—
Pyemia and Septicemia	—	—	—
Tuberculosis	64	51	115
Cancer	32	8	40
Rheumatism and Gout	—	1	1
Diabetes	6	1	7
Alcoholism	—	—	—
Encephalitis and Meningitis	3	—	3
Locomotor Ataxia	1	—	1
Congestion, Hemorrhage and Softening of Brain	41	11	52
Paralysis	9	4	13
Convulsions of Infancy	—	—	—
Other Diseases of Infancy	11	6	17
Tetanus	2	—	2
Other Nervous Diseases	5	2	7
Heart Diseases	100	66	166
Bronchitis	7	3	10
Pneumonia and Broncho-Pneumonia	73	38	111
Other Respiratory Diseases	4	2	6
Ulcer of Stomach	1	2	3
Other Diseases of the Stomach	1	1	2
Diarrhea, Dysentery and Enteritis	13	5	18
Hernia, Intestinal Obstruction	6	2	8
Cirrhosis of Liver	6	8	14
Other Diseases of the Liver	5	1	6
Simple Peritonitis	—	1	1
Appendicitis	4	—	4
Bright's Disease	26	29	55
Other Genito-Urinary Diseases	10	7	17
Puerperal Diseases	7	1	8
Senile Debility	5	—	5
Suicide	6	—	6
Injuries	31	12	43
All Other Causes	34	29	63
TOTAL	542	309	851

Still-born Children—White, 13; colored, 11; total, 24.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1,000 per Annum for Month—White, 23.23; colored, 35.54; total, 26.87. Non-residents excluded, 23.28.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure 30.00
Mean temperature 48
Total precipitation 44 inches
Prevailing direction of wind, northeast.



NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITORS:

CHARLES CHASSAIGNAC, M. D.

ISADORE DYER, M. D.

COLLABORATORS:

- C. C. BASS, M. D., Prest., Amer. Soc. of Tropical Medicine..... } *Ex Officio*
JOHN M. SWAN, M. D., Secty. American Soc. of Tropical Medicine..... }
L. R. DE BUYS, M. D., Secretary Louisiana State Medical Society..... } *Ex-Officio*,
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OTTO LERCH, M. D., Tulane University of Louisiana.
E. S. LEWIS, M. D., Tulane University of Louisiana.
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R. MATAS, M. D., Tulane University of Louisiana.
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J. A. STORCK, M. D., Tulane University of Louisiana.
R. P. STRONG, M. D., Harvard University.
ROY M. VAN WART, M. D., Tulane University of Louisiana.

Vol. LXX

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No. 10

EDITORIAL

THE MESSAGE OF CAMP GREENLEAF.

Every week, as a reward for excellence in military achievement, the Camp banner is awarded to the company of Medical Reserve Officers at Camp Greenleaf which has shown the best results. The banner bears the motto of the camp, which reads, "Do it now; do it well; don't forget to smile."

The every-day doctor who sits at home by his own fireside can have no visualization of the coördinated effort of the army and civilians who comprise the training camp for Medical Reserve Corps

officers at Camp Greenleaf. For nearly a year medical men, starting from the easy routine of civilian life, have gone through the training, a fresh group every two or three months, and have passed on into military service to take up the work of the war at the various encampments and "over there." So far, more than 3,000 men have been qualified. Not only have they apprehended the medical duties of an officer, but they have learned the discipline and the ethics of a soldier which, together, make a training in attributes which, when completed, refines the moral aptitude of the man who previously had only the philosophy which medical practice brings.

From a beginning which contemplated the training of small groups of men for military service has arisen a plan to provide properly qualified medical officers for a great army, and when a base hospital for several thousand inmates has been completed and an outlying camp for 30,000 or more men has been established, the task will have reached a consummation of which the Medical Department of the army for some time dreamed.

Such a plan was announced by the Surgeon General at a recent occasion, when the Warden McLean Auditorium was dedicated at Camp Greenleaf. This building is the beginning of the facilities for proper teaching of the Reserve Corps under cover. Previously lectures and other instruction were given in the open air or wherever the opportunity was afforded and in the face of the difficulties of inclement weather and other hardships.

It is an inspiration to duty to witness the review of one company after another of medical men, attired in uniform and equipped with an earnest intention and a proper *esprit de corps*, marching in military formation and responding to the commands of their officers as soldiers should. It is all the more noteworthy in men who, at home, arrange their own engagements, own no authority over their time, and who are accustomed to command, and not to obey. In these ranks of medical officers are men of all ages and from the faculties of teaching schools of medicine, as well as from the rank and file of the profession, and each sees his duty in this melting pot and does it now, and he does it well, and he does it with a smile.

When the possibilities of this war opened up there were some men who saw the great need of qualified medical officers and envisaged the development of the necessary material from the civil population. At the beginning of the war there were hardly four hundred members of the regular Medical Corps, and even now there are only

about seven hundred. With a remarkable spirit of coöperation this corps has studiously engaged in the problem of preparation of the more than 20,000 Medical Reserve Corps officers now commissioned. As the Surgeon General and others in his staff have repeatedly stated, the management of the Medical Department of the Army in this war is in the hands of the American profession, of which the regular Army Medical Corps forms only a small part, which will grow relatively smaller as the increasing demands make the Reserve Corps larger. Soon there will be no line of distinction in the service.

To Colonel Edward L. Munson, of the Medical Corps, belongs the credit of conceiving training camps for medical officers, and at Fort Riley, Fort Benjamin Harrison and at Camp Greenleaf nearly a year ago such training was undertaken. In each field great success has been attained, but, because of the greater difficulties, the work at Camp Greenleaf has stood out. Colonel Henry Page began with no other equipment for training than the earth, the sky and the earnest purpose to succeed. To-day there are quarters, buildings for instruction, teachers, and, above all, a flowing stream of graduated officers who are carrying the training into various places, even abroad, and, with the training, that spirit of the army which is the evidence of the resourcefulness of a great country which, when called to duty, meets it with a will to do and, with it all, there is the song of the camp and the courage which comes with the smile. This is the message that all American men of the medical profession may think of it, and if they see no duty in the line which moves to the front, they must honor those who go to do it now, to do it well, and to do it with a smile.

THE HAIR BRUSH ABOLISHED.

On March 1, 1918, under the edict of the Louisiana State Board of Health, the hair brush was abolished and prohibited in barber shops, hair-dressing establishments and in other public places.

Repeated attention has been called to the menace of the hair brush as a conveyor of disease, and particularly of dandruff, convicted as responsible for something over 90 per cent. of all baldness.

The action of the Louisiana State Board of Health was immediately based upon an extended laboratory examination of hair brushes obtained from various parts of the State. The results of these examinations are published in the Quarterly Bulletin of the State Board of Health for December, 1917.

The original field of investigation of hair brushes in relation to disease as a Board of Health endeavor is worthy of note; more than that, it deserves a hearty commendation, and the effort in this direction should stimulate like action in other States, as well as a further investigation in the laboratory field.

The report of the bacteriologist of the Board, Dr. W. H. Seemann, is interesting because of the possibilities opened up.

There were 405 hair brushes examined. The microscopic examination showed cocci, moulds or bacilli in all the brushes examined. Cultural examination of material from the hair brushes showed: in 307, gram positive bacilli; in 325, staphylococci; in 229, gram negative bacilli; in 246, gas bacilli; in 42, moulds; in 6, streptococci.

The report does not discuss *in extenso* the particular organisms discovered, leaving it to be understood that the report was only preliminary.

The organisms of dandruff (Seborrheic dermatitis) are far from definitely determined and the field is one for further careful study. Unna, who was largely responsible for the recognition of Seborrheic dermatitis, demonstrated a bottle-bacillus and a morococcus; Sabouraud claims a microbacillus responsible, and Merritt has shown the autoinoculability of the disease. Nevertheless, no specific organism has been accepted and a group infection is not acceptable.

The early determination of dandruff infection, however, and the ready transfer with the hair brush make it the source of evil, and its elimination will be a large factor in the control, if not in the eradication, of a disease which certainly occasions baldness and which is associated with many eczemas, acne and with the development of forms of epithelial cancer.

It is to be hoped that the Louisiana State Board of Health will encourage its laboratory workers to go on in this interesting and promising field of experiment and investigation.

THE VOLUNTEER MEDICAL SERVICE CORPS.

It has been recognized always that the medical profession is made up of men whose patriotism is unquestioned and who are eager to serve their country. Slight physical infirmities, or the fact that one is beyond the age limit (fifty-five years), or is needed for essential public or institutional service, while precluding active work in camp or the war zone, should not prevent these physicians from close relation with governmental needs at this time.

To complete the mobilization of the entire medical and surgical resources of the country, the Council of National Defense has directed the organization of a "Volunteer Medical Service Corps," which is aimed to enlist in the general war-winning program all reputable physicians and surgeons not eligible to membership in the Medical Officers' Reserve Corps.

It is intended that this new corps shall be an instrument able to meet civil and military needs not already provided for. The General Medical Board holds it as axiomatic that the health of the people at home must be maintained as in times of peace. The medical service hospitals and medical colleges must be up to standard, conserving the health of the families and dependents of enlisted men, and the preservation of sanitary conditions must be fully met in time of war as in time of peace.

The needs at home should be met now as well as ever. This double burden will fall heavily upon the physicians, but the medical fraternity will acquit itself fully in this regard, its members accepting the tremendous responsibility in the highest spirit of patriotism.

It is proposed that the services rendered by the Volunteer Medical Service Corps shall be in response to a request from the Surgeon General of the Army, the Surgeon General of the Navy, the Surgeon General of the Public Health Service, or other duly authorized departments, general administration to be vested in a Central Governing Board, which is to be a committee of the General Medical Board of the Council of National Defense. The State Committee of the Medical Section of the Council of National Defense constitutes the Governing Board in each State.

Conditions of membership are not onerous, but such as any qualified practitioner can meet. Physicians intending to join shall apply by letter to the secretary of the Central Governing Board, who will send a printed form, the filling out of which will permit classification according to training and experience. The data of applicants will be submitted to an executive committee of the State Governing Board, and the final acceptance to membership will be by the national body. An appropriate official button or badge is to be adopted.

The executive committee of the General Medical Board comprises: Dr. Franklin Martin, chairman; Dr. F. F. Simpson, vice-chairman; Major William F. Snow, secretary; Surgeon General Gorgas, U. S. A.; Surgeon General Braisted, U. S. Navy; Surgeon General

Rupert Blue, Public Health Service; Admiral Cary T. Grayson, Major Charles H. Mayo, Lieut. Col. Victor C. Vaughan and Lieut. Col. William H. Welch.

THE NATIONAL LEPROSARIUM LAGS.

In 1916 Congress voted \$250,000 for a national institution for the care of lepers and placed the administration of this fund in the hands of the United States Public Health Service. In the *Journal of the A. M. A.*, January 19, 1918, Frederick L. Hoffman calls attention to the fact that leprosy continues at large in many States and that in most places the disease goes on without any restriction.

The argument has been consistently strong in favor of the provision for care of these unfortunates, and there seems to be some dereliction on the part of the constituted authorities to whom have been given the means to take adequate steps for the lepers in the United States. We have more than once noted the fact that the United States stand out as neglectful of this disease, when most other countries have looked out for it. The extra territorial possessions of the United States, as Porto Rico, the Canal Zone, Guam, the Sandwich Islands and the Philippines, have all hospital or asylum to which lepers may go or to which they must go, but here there seems to be a faltering step in undertaking the obligation laid on the Public Health Service.

It is no longer doubtful that leprosy may be cured, and it is certain that, under careful institutional treatment, the amelioration of the disease is more rapid than otherwise. Louisiana has demonstrated this.

Dr. Hoffman calls attention to the plight of Mississippi, with its lepers at large and no provision for them, but Texas, Florida, New York, Illinois, Wisconsin, Minnesota, and probably many other States are in like dilemma.

The existing provisions by Congress were attained only after long and earnest efforts of the committee headed by Senator Ransdell, of Louisiana. Previous efforts on at least three occasions failed of action by Congress and the proposed legislation died in committee. It was on each occasion frequently suggested that the old Marine Hospital Service had some responsibility for the failure in legislation, as that service wanted the control of any provisions made. That control has now been in their hands (in the U. S. P. H. S.) for most of two years. *What are they going to do with it?*

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

DOUBLE RECURRENT AND BILATERAL TUBAL PREGNANCIES.**An Analysis of Eighty-nine Cases Reported in the Literature and Three Unpublished Personal Cases.**

By AIME PAUL HEINECK, M. D., Chicago, Ill.

Extra-uterine pregnancy is one of the most important maladies of the child-bearing period. It occurs in all races, appears to be less frequent in the colored—four negroes in 169 cases. The condition, though more frequently recognized than heretofore, is, nevertheless, too often overlooked, misdiagnosed, and, therefore, mistreated. The safety with which the abdomen is now opened affords opportunity for the recognition, study and relief of many conditions which previously escaped detection. A more complete understanding of the tubal gestation will lead to the saving of lives and to the prevention of invalidism.

Tubal gestation is by far the most common variety of ectopic pregnancy. It is single, double or multiple, unilateral or bilateral. It may be a woman's first and last conception; it may be preceded by a long period of infertility; it may end a woman's child-bearing career; it may make future pregnancies impossible; it may precede or follow a normal pregnancy or pregnancies. It has preceded and has followed uterine abortions. Tubal pregnancy may co-exist with an uterine pregnancy. It can occur in the absence of other pathological states of the pelvic or other organs. Its occurrence in one tube does not protect against its occurrence in the opposite tube, does not absolutely protect against its recurrence in the same tube.

Double and recurrent tubal pregnancies have not received adequate study and consideration. To facilitate the task of future investigators, I have collected, studied and analyzed all cases of double and bilateral tubal pregnancies reported with sufficient data in the English, French and German literature from 1903 to 1916, inclusive. Only original reports of cases in which the diagnosis

was verified at operation were considered. The statements made in this article are entirely based either on these reported cases or on our unpublished personal cases.

Double tubal pregnancies are almost invariably bilateral; exceptionally unilateral.

Double and bilateral pregnancies are either simultaneous or recurrent. If simultaneous, both conceptions begin at or about the same time; both gestations may develop, or one may be interrupted and the other continue. Usually, the two foetal cysts differ in size and destiny. Twenty-nine of the double tubal pregnancies herein considered belong to the simultaneous group. One double tubal gestation occurred in a nullipara forty-one years old, another in a multipara forty-five years of age. The other simultaneous cases in which the age was recorded tabulate as follows:

From 20 to 24, inclusive.....	3 cases, 10.34%
From 25 to 29, inclusive.....	11 cases, 37.93%
From 30 to 34, inclusive.....	7 cases, 24.13%
From 35 to 39, inclusive.....	4 cases, 13.79%

As previously stated, the recurrent type is by far the most frequent (63 cases). Almost always the recurrence is in the opposite tube. Recurrence of gestation in the same tube is a rarity.

The ages of the patients at the time of the second tubal gestation and percentage incidence as to the ages is shown by the following table:

From 20 to 24 years, inclusive.....	3 cases, 4.76%
From 25 to 29 years, inclusive.....	20 cases, 31.74%
From 30 to 34 years, inclusive.....	20 cases, 31.74%
From 35 to 39 years, inclusive.....	7 cases, 11.11%

Comparison of the two previous tables with the following reveals that the age incidence of tubal gestation is not the same as that of uterine gestation.

Normal Births in Chicago, Based on 3,600 Cases (Redfield).

From 20 to 24 years.....	31.95%
From 25 to 29 years.....	29.72%
From 30 to 34 years.....	18.64%
From 35 to 39 years.....	10.14%

Double and bilateral tubal pregnancies can occur at any period of the child-bearing age. We do not know how often tubal pregnancy recurs; we do not know why it occurs. Authors are not

agreed as to the frequency of recurrence. The frequency of recurrence in the practice of various clinicians is shown by the following table:

Hunner.	31 cases of tubal gestation,	2	recurred.
Madlener.	63 cases of tubal gestation,	3	recurred.
Heineck.	70 cases of tubal gestation,	2	recurred.
Lothrop.	83 cases of tubal gestation,	3	recurred.
Rosenstein.	100 cases of tubal gestation,	6	recurred.
Horrman.	101 cases of tubal gestation,	5	recurred.
Wertheim.	120 cases of tubal gestation,	7 or 8	recurred.
Finsterer.	133 cases of tubal gestation,	9	recurred.

One ectopic pregnancy is not necessarily followed by another ectopic pregnancy. Normal pregnancies may be sandwiched in between two extra-uterine gestations.

Months, or even years, may elapse between the incidence of pregnancy in one tube and the lodgment of an impregnated ovum in the opposite tube. Some authors reckoned the time interval either between the inception of the two abnormal pregnancies or between the two operations performed for their relief. The latter method is basically faulty.

In our collected cases the interval between the two tubal gestations varied from three months to nine years. In twenty-one cases, tubal gestation recurred within one year; in twelve, within three years. In some cases the time interval between the two tubal gestations was four years, five years, seven years and seven months; in others the time interval was not definitely stated.

Double, recurrent and bilateral tubal pregnancies occurred in women who have never borne living children. Tubal pregnancy has recurred in women who have borne one living child, two children, three children, four children, five children and six children.

Double, recurrent and bilateral tubal pregnancies, like other varieties of ectopic gestation, not infrequently occur in women who, though frequently exposed to pregnancy, have remained sterile. In many cases a long period of sterility precedes double, or intervenes between two tubal gestations.

The cause of tubal pregnancy, whether single, double or recurrent, is not definitely known. Many hypotheses have been advanced, some very plausible, none of universal application. No causative factor, present in every case, has been demonstrated. Not uncommonly, co-existing pathological states are found. Are these pathological states coincidental or etiological factors? With the

data at hand, a positive answer is not possible. The problem calling for solution is, why does the impregnated ovum fail to find its way into the uterus?

Inflammatory and other degenerative changes of the tubal wall do not possess the important etiological rôle formerly attributed to them. Though all conditions that obstruct, delay or hinder the progress of the impregnated ovum to the uterus favor the occurrence of ectopic gestation, still many cases occur in which, the existing tubal gestation excepted, there is a total absence of pathological tubal or ovarian changes, congenital or acquired. Actual examination at time of operation has firmly established the fact that an inflammatory condition is not present in all cases. "In a certain proportion of cases, the most careful clinical history and microscopical examination of the specimen will fail to reveal a tangible cause for the condition" (Williams).

It has been believed that the predominant cause of tubal pregnancy is salpingitis, post-abortion, post-partum or gonorrheal in nature, with resulting destruction of the tubal ciliated epithelium. "I have been able to demonstrate the presence of cilia in nearly every pregnant tube which I have examined" (Williams).

In some cases the presence of co-existing pelvic pathological states is recorded, cyst of parovarium, ovarian cyst, polycystic degeneration of left ovary.

In one case Puppel removed the left ruptured and pregnant tube and separated the right adnexa from embedding adhesions. One year later the right tube became pregnant and ruptured.

Smith reports a case presenting the similar features. Wesenberg, in his case, removed a first-sized Fallopian tube containing coagula and fetal rests. Examining the thickened right tube and finding its fimbriated end closed, he incised the fimbriated end and sewed the tubal mucosa to the tubal serosa. One year later this repaired tube became pregnant.

All our collected and personal cases were primarily either interstitial, isthmie or ampullary. All the others were bilateral. These ninety-two cases represent 185 tubal gestations. Not one of these pregnancies, either first or second, went to full term.

Sixteen gestations were subjected to operative relief previous to tubal abortion or tubal rupture.

Thirty-two tubal gestations terminated in abortion; seventy-five in rupture. In the remaining cases the termination is either not recorded or not definitely stated. Termination depends, in great

part, upon the implantation site of the ovum; thus, in the isthmic form, this portion of the tube not admitting of much distention, early rupture is the rule. In the ampullary form, the tubal wall offering less resistance in the ampullary region to the growth of the ovum, abortion is the rule. Tubal abortions are due to rupture through the capsular membrane; they are incomplete, or complete, the incomplete being the more common. Complete tubal abortion implies complete expulsion of the ovum, membrane and contents, into the peritoneal cavity by way of the abdominal ostium of tube. In complete abortion, the hemorrhage is usually slight. In the complete type there is a partial loosening of the ovum from the tubal wall and only parts of the ovum pass into the peritoneal cavity. In incomplete tubal abortion the hemorrhages recur, as evidenced by repeated colicky pains, laminated clots. Tubal abortion has been appropriately designated by some authors as intra-tubal rupture.

Rupture, extra-tubal, occurs at or near the placental site, taking place, either into the peritoneal cavity or between the folds of the broad ligament. Primary rupture of the ovum, in by far the larger number of cases, occurs previous to or about the eighth week; in a few cases it occurs later. It may involve any portion of the tube—isthmic, middle third, ampullary—and vary in size from a pin-point to a tearing asunder of the entire tube. Even a pin-point rupture may cause a fatal hemorrhage. In the only case of this series in which hemorrhage apparently caused death the rupture was a small orifice on the free portion of tube through which chorionic villi projected. The tubal tissues in contact with the ovum offer slight resistance to the fetal elements, and, being early invaded by the chorionic and fetal cells, the pregnant tube soon undergoes degenerative changes. The tubal wall is weakened both by the continuous and gradually increasing distention exerted by the growing ovum and by the erosive action of the fetal elements upon the maternal tissues. The tubal resistance being thus impaired, rupture is easily brought about either by direct perforation by the growing villi or by any sudden opening of a large vessel, by the clogging of venous channels or by slight external violence, as vaginal examination, coitus, fall, etc.

Bilateral tubal gestation may terminate in tubal rupture in one tube and in tubal abortion in the other.

Tubal abortion and tubal rupture, be the latter intra- or extra-tubal, are associated with moderate or profuse internal hemorrhage,

either in the lumen of the Fallopian tube, between the folds of the broad ligament or into the peritoneal cavity. When capsular rupture takes place in a tube with closed fimbriated end an hemato-salpinx results. If the rupture involves a part of the tube not covered by peritoneum, an intra-ligamentary hematoma results. The duration and extent of the hemorrhage will determine the size of the hematoma. When the pressure of the surrounding tissues and extravasated blood equals or exceeds the intra-vascular pressure, all further hemorrhage is checked. In tubal abortion, and in tubal rupture of a portion of the tube covered by peritoneum, the hemorrhage may be moderate and circumscribed, an hematocele results; may be profuse and diffuse, an hemoperitoneum results.

When hemorrhage takes place into the free peritoneal cavity, a practically limitless space, the patient may bleed to death without a drop of blood appearing externally. These profuse hemorrhages into the peritoneal cavity are designated by the French "inondation péritonéale."

Blood extravasated in the lumen of the tube, between the folds of the broad ligament or in the peritoneal cavity, either undergoes absorption, coagulation, organization, cyst-formation, or suppuration.

FATE OF THE OVUM.

The ovum lodged in a tube being always poorly fixed, poorly nourished, most tubal pregnancies come to end previous to the eighth week. When tubal gestation ends this early, be the termination due to ovular apoplexy, tubal abortion or tubal rupture, the ovum is absorbed. This is the fate of young embryos extruded into the peritoneal cavity, if they be not removed by the surgeon. When, after tubal abortion or tubal rupture, the placenta retains some tubal implantation and contracts new attachments to the pelvic wall, rectum or other viscus or viscera, the placental circulation thereby continuing, the pregnancy becomes tubo-abdominal or tubo-peritoneal in type. Absorption is more difficult after the third month.

In many operations for early tubal gestation the embryo is found in the tube or in the abdominal or peritoneal cavities. This occurred in nineteen of our patients in which there were found, either in the tube or in the peritoneal cavity, one, two and, in one case, three fetuses. Most of these were found at the time of the second gestation. The fetuses varied in size from 3 m. m. to 20 c. m.

Ovular debris, placenta, decidual cells, fetal rests, chorionic villi,

etc., are more frequently found at time of operation than fetuses. In twenty-four cases, the presence of inflammatory adhesions binding the pregnant tube to the pelvic wall, to the omentum, to the caput coli, etc., is recorded. These adhesions, rarely found at the time of the first operation, are not uncommonly noted in operations for recurrent tubal gestation.

The symptoms of tubal gestation, like those of uterine gestation, can be classified into presumptive, probable and positive. The positive symptoms of pregnancy, fetal heart-sounds, active and passive fetal movements, palpation of fetal parts, are usually not detected until after the fourth month of gestation. Now, as 81 per cent of tubal gestations terminate before, at or about their eighth week, it can be seen that the positive signs of tubal pregnancy, corresponding to the positive signs of uterine pregnancy, are rarely present, and, therefore, rarely detected. In not one of our cases were any of the positive signs of pregnancy present.

Previous to tubal abortion and to tubal rupture, presumptive signs of pregnancy, such as amenorrhea, nausea and vomiting, bluish discoloration of vaginal walls, pigmentation and striæ, urinary disturbances were noted in many of the cases. Amenorrhea is so constant a symptom in tubal pregnancy that its absence is misleading. In twenty-nine cases of simultaneous double tubal pregnancy a cessation of the menses for a varying period is recorded in twenty-seven cases. In the remaining two cases amenorrhea is not recorded as present or absent; there was vaginal hemorrhage in both, but from the text it is hard to tell whether this uterine hemorrhage was or was not a menstrual hemorrhage. Menstrual irregularity should arouse suspicion.

In the bilateral cases in which gestation was of successive occurrence, cessation of the menses occurred, with few exceptions. The duration of the suppression, of course, varies according to the age of gestation. In some in which amenorrhea is not noted, what was mistakenly considered menstrual hemorrhage was a uterine flow incident to the termination of the tubal pregnancy.

Other presumptive symptoms, such as nausea and vomiting, colostrum secretion, milk secretion, bluish discoloration of the vaginal wall, enlargement of breasts, etc., are less frequently recorded.

Among the probable signs, the most frequently noted in our series were changes in size, consistency and position of the uterus.

"The existence of an enlarged uterus at any time during the child-bearing period should be regarded as presumptive evidence of pregnancy until such a possibility has been conclusively eliminated" (Williams).

The victim of ruptured tubal gestation is not, as a rule, struck down without premonitory symptoms or warning. Patient suspects pregnancy. Suspicion of ectopic gestation should be entertained upon the complaint of sudden pelvic pain in a woman of child-bearing age. The most characteristic symptoms that confront the clinician are those determined by tubal rupture or by tubal abortion. Both of these accidents are associated with pain and with internal hemorrhage, the extent of which determines the gravity of the case. Very often the patient first comes into the hands of the physician some time after she has recovered from the primary shock due to tubal rupture or tubal abortion.

In tubal abortion there may be acute, severe, cramp-like pain, limited to the pelvic region or referred to other portions of the abdomen; there may be absence of pain. In many cases of tubal abortion about the only symptom we have is abdominal pain and uterine colic preceding and accompanying the expulsion of the decidual cast.

In tubal rupture the pain is intense, agonizing, may cause the patient's collapse. It is most marked in the lower abdomen, and may be referred to the right side, to the left side, to right kidney region, to the rectum, epigastrium, umbilicus.

Coincident with the lodgement and development of the ovum, the uterus, during the first three months of tubal gestation, undergoes hypertrophy, and its endometrium becomes converted into a decidua similar to that observed in uterine pregnancy. Soon after the death of the fetus, the decidua is thrown off, being expelled in shreds, or as a triangular cast of the uterine cavity, with dimensions corresponding to that of the hypertrophied uterus. According to Remy, the expulsion of a decidual cast of the uterine cavity is always a sign of ectopic pregnancy.

Though tubal pregnancy, and especially bilateral tubal pregnancy, are frequently operative discoveries, the diagnosis being rarely made previous to tubal abortion or tubal rupture, the following symptoms, taken in conjunction with a suggestive history and suggestive pelvic findings, should make one think of the possible existence of tubal gestation:

a. Presence of the presumptive symptoms and signs of pregnancy: Morning sickness, milk and colostrum secretion, pelvic pains referable to bladder and rectum.

b. Cessation of the menses.

c. Bluish discoloration of the vaginal wall.

d. Softening of the cervix.

e. Changes in size, consistency and position of uterus.

The existence of ectopic pregnancy is highly probable when, in association with the above, palpation reveals an indefinitely outlined tender, boggy mass to one or both sides of the uterus in a patient who has or has had symptoms of acute anemia and attacks of acute abdominal pains, especially if the abdominal tumor has increased in size with each attack of abdominal pain.

If, during an intermenstrual period, with or without a suppression of the menses, a woman has an attack of severe abdominal pain, followed by vomiting, collapse, slight uterine hemorrhage, think of tubal abortion. If, after a few days or a few weeks, the same clinical picture recurs, suspect the existence of a bilateral tubal pregnancy.

The severe pain of tubal rupture is accompanied or followed by symptoms of abdominal hemorrhage and acute anemia, pallor, dizziness, nausea, collapse, weak, thready pulse. A definite muscular rigidity is noted by several reporters. In almost all cases associated with the above, vaginal hemorrhage, varying in amount, slight, profuse, and in duration three to six weeks, is said to have been present. These attacks of pain and vaginal hemorrhage, anemia may be repeated. Bi-manual vaginal examination usually detects an elastic, often globular, tumor-mass, to one or other side of the uterus, or peri-uterine mass occupying the cul-de-sac of Douglas and the two lateral cul-de-sacs, and in a few instances even extending into the iliac fossa. Previous to rupture or abortion, the fetal cyst may displace the uterus in various directions to the right, to the left, forward.

The treatment of ectopic gestation previous to, at time of, or after tubal rupture or abortion is operative. As stated in some of our previous publications on this subject, we disregard completely the life of the ectopic fetus and concentrate our efforts to saving the maternal health and the maternal life. The ectopic fetus, in all its various forms and at all periods of its existence, is a distinct menace to the maternal organism. Operation removes in a few minutes what it will require nature unaided, even in the most favor-

able cases, a long time to accomplish, and thereby early secures the safety of the patient.

The operation for the relief of ectopic pregnancy, for the control of its complications and the cure of its sequelæ, may be an emergency operation, may be one giving us time for ample preparation of the patient. In a general way it can be said that an ectopic gestation is a malignant growth, and the longer it is unmolested the greater are the dangers to the mother.

In cases of tubal rupture, and also in cases of tubal abortion associated with symptoms of abdominal hemorrhage, operative relief must be immediately substituted. The patient can bleed to death into the peritoneal cavity without a drop of blood appearing externally. Peritoneal flooding calls for immediate intervention. Operation is equally indicated previous to tubal abortion or tubal rupture, but under these conditions, if the patient is vigilantly watched, delay of two or three days is not very significant.

In all operations for ectopic pregnancy we discard the vaginal route. We prefer the abdominal route. Most diagnostic mistakes are common conditions that simulate unilateral or bilateral ectopic pregnancy, require for their cure an abdominal section: appendicitis, hydrosalpinx, pyosalpinx, ovarian cyst, sub-peritoneal uterine fibroid. If these conditions were mistakenly diagnosed ectopic gestation, no harm has been done. The laparotomy enables one to remove them. If they co-exist with a tubal gestation, laparotomy enables one to appropriately treat both conditions. We are justified in making our diagnoses and basing our management of cases upon presumptive evidence. A large mortality results from delayed diagnoses.

The most immediate danger of tubal abortion or tubal rupture is hemorrhage. Laparotomy permits an immediate and complete arrest of hemorrhage. Colpotomy permits an evacuation of blood clots. If the blood accumulation has acted as a tampon, its mere evacuation may be followed by a recurrence of the hemorrhage. Laparotomy not only secures absolute hemostasis, but enables one to eliminate the danger of post-operative or secondary hemorrhage.

Laparotomy permits a more complete removal of ovular debris and extravasated blood. It is not necessary to remove all blood from the peritoneal cavity. Let there be no needless traumatizing. Furthermore, it allows inspection of the pelvic organs and enables one to decide at once whether or not the opposite tube should be removed.

Unilateral tubal pregnancy calls for removal of the pregnant tube. The operator must not be haunted by the thought of recurrence. Recurrence in the opposite tube is exceptional.

We are not justified in sterilizing a woman just because she has had a tubal gestation. Remove the unaffected tube:

a. If there be existing in the patient some constitutional state contra-indicating pregnancy, such as epilepsy, alcoholism, worst types of neurasthenia, syphilis, mental disease, imbecility, advanced tuberculosis, advanced cardiac or hepatic disease, renal, bad types of primary anemia.

b. If there be existing in the patient some pelvic deformity preventing delivery through the maternal passages of a viable fetus.

c. If it be imbedded in adhesions, if it be malformed or the seat of a congenital anomaly or of inflammatory, neoplastic or other degenerative changes; hydrosalpinx, pyosalpinx, etc.

Do not remove the unaffected tube unless there be existing in the patient a condition contra-indicating pregnancy. There are many cases on record where a normal pregnancy has occurred after the ablation of a Fallopian tube.

In unilateral tubal pregnancy and in bilateral tubal pregnancy there should be no needless removal of tissues or organs. Therefore, if the ovaries are normal or only slightly altered, their preservation will be of great benefit to the patient. In addition to removing the pregnant tube, fetus and ovular debris, if the patient's condition permits, correct co-existing pathological states. Many operators, in addition to performing a bilateral salpingo-oophorectomy, supra-vaginal or a total hysterectomy, broke up inflammatory adhesions or removed the appendix vermiformis presenting acute or chronic inflammatory changes. Others removed a co-existing cystic ovary, a cyst or parovarium.

In our tabulated cases there were removed forty-two left and forty-seven right Fallopian tubes. In fifteen cases it is stated that the left ovary was removed. The right ovary was removed twenty-two times. In a few other cases portions of the ovary were removed. In six cases the conditions were such that the operators were compelled to perform either a total or sub-total hysterectomy. In fifteen instances abdominal drainage was used; in three instances vaginal drainage was used. It may be said that, as a general rule, the use of drainage in these cases is inadvisable.

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SOME RECENT LITERATURE ON SHOCK.*

By F. W. PARHAM, M. D., F. A. C. S., New Orleans.

In an address on shock and its management in 1913 I said: "Since Crile opened up the new era in shock investigation in 1889 we have acquired a vast deal of information, but who can say we have arrived at ultimate truth?" At that time Crile's vasomotor theory seemed the most reasonable and the most practical explanation of shock, and even to-day, though the foundation has been seriously undermined, the therapeutic deductions consistently drawn from his investigations remain the most satisfactory that have so far been suggested.

But we are living in the most stirring period of the world's history, and while science on the one hand has been busy in evolving the most destructive engines of war, it has, on the other hand, shown itself most wonderful in the development of the agencies intended to preserve life and ameliorate human suffering. The medical profession in this war has made itself felt as never before in the history of the world. Dr. Crile recently characterized the war machine thus: "One part of the machine blasts and breaks and tears, terrorizes and kills; the other part conserves and discovers, assuages and relieves, reclaims and rebuilds. This is the medical part, our part of this war machine!"

Many new problems have arisen and old problems are finding new solutions. Antisepsis has been again revived, for new conditions confront the surgeon, and his ingenuity is working out new plans of treatment, because the old plans have failed. The saving of life and the mitigation of suffering are the watchwords now. The problems of shock are again in the forefront, and surgeons and laboratory workers are busy as never before, for the needs of the wounded are greater than ever before. Coöperation is the order of the day in every phase of defense.

At the request of the Committee on Physiology of the National Research Council, a coöperative investigation of surgical shock has been instituted in a number of physiological laboratories throughout the land, and many independent investigations are being carried on. Under the impetus of the necessities of war, this work is proceeding steadily, and already the fruits are apparent. Since this

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world-war began, many valuable papers have been published and the literature of the past three years has illuminated many of the obscure phases of shock, if it has not settled them. Cannon, in his Shattuck lecture, has discussed in a most interesting and instructive way the signs and symptoms of shock and has attempted a classification and analysis of its phenomena. He examines them under four heads: The disturbances of sensation, of motion, of respiration and of circulation. He rejects Meltzer's theory of central inhibition as untenable and unnecessary. In a state of shock the blood pressure is low and evidence is at hand that increased synaptic resistance is present—that is, there is a blocking of the afferent pathways to the central cells, requiring increasing stimulation to pass the raised synaptic threshold. Inadequate blood supply impairs the nutrition of the muscles and the nerves innervating them, thus explaining the general relaxation, the irregular and feeble movements and the slowing and weakening of central nervous function. Fall of temperature, thirst, sweating and pupillary dilatation are to be regarded as secondary.

The superficial, rapid character of respiration at once refutes the idea of Yandell Henderson that undue pulmonary ventilation caused by pain is the primary factor in shock. Henderson himself seems now to contend less strenuously for his theory. Even acidosis, which may, by irritation of the respiratory center, produce increased frequency of respiration, must be considered secondary to some other cause. The circulatory signs of shock are a low arterial pressure, pallor, small, thready pulse and a cold skin. To explain these, the cardiac factor, the vasomotor factor and the factor of blood volume must be studied. The cardio-inhibitory paralysis theory of Howell is disproved by the reflex slowing of the heart following stimulation of the central end of the cut vagus and by the dropped beats caused by adrenalin. That the heart is not at fault is shown by its acting as soon as supplied with blood. Low arterial pressure may affect the heart, and increased hydrogen-ion concentration of the blood causes cardiac relaxation. "The important considerations are to increase the volume of well-oxygenated blood, so as to lessen the dangers of acidosis, and to raise arterial pressure to such a degree as to provide a proper flow through the coronary vessels."

The cardiac factor is, therefore, not primary in shock, nor is the vasomotor factor. The experiments of W. T. Porter, of Seelig and Lyon, of Seelig and Joseph, of Frank Mann, of Morrison and

Hooker, of Yandell Henderson and many others show this center to be not paralyzed, but in a state of *increased* activity, and Pike, Guthrie and Stewart have shown it more capable than any other center of withstanding the influences of anemia. Low pressure does not prove its exhaustion, for this follows hemorrhage also. Cannon concludes that "we must respect the vasomotor center as an agent whose capacities for continued action are its most outstanding feature."

The real explanation for the circulatory disturbances is to be found in diminished volume of blood in circulation. The same thing occurs in hemorrhage, but the explanation is different. In hemorrhage the blood is actually lost from the body, whilst in shock it is in the body, but not in circulation. There seems to be general agreement that it is locked up in the portal system. Clamping the portal vein causes the same fall in pressure as in severe bleeding, and Mann and Morrison and Hooker have pointed out the distention of the mesenteric veins in shocked animals.

Frank Mann has published some experiments to show that a large amount of blood is retained in the splanchnic area in shock. He set the problem to determine the actual loss to the circulation. He ascertained first the total amount of blood to body weight. This he estimated at 7.7 per cent., or $\frac{1}{13}$ of body weight. He thus established the normal standard. He then bled the animal from a large vessel; this represented the measure of efficient blood. He then drew the blood from the venous side (the right auricle), which, added to the arterial blood, made up the mobile blood. The sum of these two, subtracted from the calculated total blood, represented the immobile or useless blood. In unshocked animals 24 per cent. could not be drawn and was considered immobile blood. He found that, in shock produced by opening the abdomen and manipulating the intestines, 61 per cent. remained immobile. Compare this with complete destruction of vasomotor center, which immobilizes only 42 per cent. In shock the amount of circulating blood is less than in section of the spinal cord. A series of experiments confirmed these statements. This immobilization of blood takes place beyond vasomotor control.

Mann contends that the pathology of shock and hemorrhage is identical.

A memorandum upon shock and some allied conditions issued by the British Medical Research Committee, February 27, 1917,

furnishes some exceedingly valuable data intended to aid in the elucidation of this complex problem.

Dale and Laidlaw's experiments with histamin are fascinating in their interest. They find, by the use of the hemoglobinometer and the hematocrit, "that the profound fall of blood-pressure produced by this substance is accompanied by a striking concentration of the blood, amounting in some cases to a loss of one-half the original volume of plasma in about five minutes." But this is not the only way in which the blood volume in circulation is reduced.

While the evidence seems to point to constriction of the arterioles in shock, "they provisionally attribute the shock in the first instance to a widening of the whole capillary area in the viscera and the musculature." They instance Colton, Slade and Lewis (Heart, 1917) as furnishing evidence of "active contractility of the capillaries." Dale and Laidlaw suppose that, under the action of the poison, the capillary tone is lost, "so that, the blood from the arteries being diffused and stagnant among the slack capillary channels, the quantity of blood reaching the veins is inadequate for the filling of the heart."

About the main fact, that there is depletion of the macroscopic vessels, both arterial and venous, there can be, they say, no room for doubt; it will be obvious how this deficiency will be aggravated by the direct reduction of blood volume by loss of plasma to the tissues.

The loss of plasma, too, increases viscosity, which still further impedes the flow. This impeded flow leads to defective oxidation, with resulting acidity, and so, to further loss of water by osmosis, as suggested by Henderson. Frank Mann likens the phenomenon to the stasis of inflammation.

Lastly, the fall of arterial pressure, due to defective filling of the heart-chambers, and the increased viscosity of the blood, will seriously interfere with the coronary circulation and, consequently, the nutrition and oxygenization of the heart muscle itself. A series of "vicious circles" is set up.

Dale and Laidlaw, impressed by the similarity of these phenomena to those of shock, made the experiments with animals in shock and found similar phenomena developing.

Captain Marshall (R. A. M. C.) made some observations in France on the hemoglobin content of blood, which seems to support the view that oligemia is an important factor.

Experiments are also reported of Dale and McIntosh with organisms of the gas gangrene group isolated from human material.

The evidence available indicates a striking similarity of origin underlying the similarity of symptoms between the toxemia of gas gangrene and shock-like conditions.

Effects of the same kind are produced by other products of protein digestion, bacterial products, etc.

Bainbridge and Trevan also are referred to as conducting experiments on the effects produced by the systemic and portal circulations by repeated injections or by long-continued slow infusion of adrenalin. The same factor of concentration of blood has presented itself. The inquiry was suggested by the observation of Elliott, Cannon and others, that extreme emotion or severe pain, factors in some cases of shock, are accompanied by an outpouring of adrenalin. The significant fact was made out of a great rise in portal pressure, the systemic venous pressure remaining unaltered. This was accompanied by great loss of plasma and increased viscosity, as shown by the relative increase of the corpuscular element. There was evident obstruction in the liver. The nature of the obstruction will be the subject of further investigation.

Mann contends that shock and hemorrhage are identical in all essential particulars. In one respect, however, most important for the purposes of the surgeon, the two conditions differ materially, as has been clearly pointed out by the British Research Committee. In hemorrhage, even of sufficient severity to diminish the output of the heart and lower the blood pressure, if the case be not allowed to go too far, normal reaction may yet take place, fluid be drawn back into the vessels and restoration be established, and this, we know, may be enormously assisted by transfusion of blood or by saline infusion. In shock, oligemia is pronounced, the outgo of plasma into the tissues continuing in spite of the introduction of fluids into the blood. Only the most temporary benefit is accomplished. So long as a man is alive there is hope in hemorrhage if fluids can be introduced. So bad, however, is the picture in shock, that Rendle Short declared in 1914 that it was hopeless to do anything for the shocked victim. In hemorrhage, too, cardiac stimulants have a place, but in shock they are worse than useless, until reaction can be otherwise established.

The various experimental results in this report "suggest that the removal of blood from effective circulation may be brought about in more than one way," by blood poisons, such as histamin, protein substances, bacteria or their products, such as the gas bacillus of

Welch, as well as by hemorrhage and traumatisms. We might add to these caisson disease, in which air embolism occurs (Pike), and Simonds calls attention to two very widely used methods of inducing a condition of low blood pressure simulating surgical shock in man, namely: peptone poisoning and fat embolism. In both these the fall in blood pressure is marked and the condition cannot be readily distinguished from shock. There are some differences which seem to favor the statement of the British Research Committee that there may be different forms of shock and that the forms are related to the cause. In peptone shock the blood accumulates in the liver and the right heart is empty. In fat embolism there is general venous stasis, and both right auricle and ventricle are dilated, owing to the pulmonary obstruction. There is loss of tonus in the one case in the pulmonary, and in the other in the splanchnic vessels.

May there not be a special traumatic type of shock marked by obstruction in the liver, as shown by swelling of this organ and congestion of the portal system? The work of Simonds seems to indicate that this may be differentiated from another form of shock without this feature. May not traumatisms of different parts of the body affect differently various areas of the vast capillary system, if the views of Colton, Slade and Lewis, that capillaries have contractile power of their own, are to be accepted, so that in the one case we may have primarily the portal circulation, in another the pulmonary and in another the intracranial area affected? As surgeons we must, with Bloodgood, take issue with Mann, who asserts that shock can only be induced in an animal under ether by opening the abdominal cavity and irritating the intestines. If it be correct that, in an animal under ether, no amount of peripheral irritation will bring it into a state of shock, I am sure most active hospital surgeons have seen many a man reduced to dangerous, often fatal, shock by severe crushing of limbs or head. What is the experience of this war? Even operative shock under ether we have seen. W. T. Porter remarks that, in beginning his study of traumatic shock in France and Belgium, he asked what wounds were most often followed by shock, and was told by the surgeons of Compiègne and La Panne that shock was most frequent after shell fractures of the femur, less so after injuries of the smaller humerus and small bones. Again, in his third article, published September 6, he reports that, of numerous wounded, "the only shock was that caused by fracture of the femur or by multiple wounds of the subcutaneous tissue." He substantiates these statements in his fourth

communication (September 6, 1917). Archibald and McLean, who spent eighteen months in service in France, report, in a paper read before the American Surgical Association, practically all the wounds "were of the locomotor system or the abdomen." Porter, in his fifth communication, states that "in over one thousand consecutive cases of shock no instance was encountered except in severe abdominal injuries, fractures of the femur and multiple severe wounds of the subcutaneous tissues." In the abdominal cases he thought the mechanism was clearly direct injury of the great splanchnic system. In the other two types, the cause was, in his opinion, fat embolism. The shock in the fat embolism cases came on later—several hours or even days. Bissell, referring to Bloodgood's criticism of Frank Mann's view that he cannot agree that abdominal exposure is the only way to cause shock, argues that the cases spoken of by Bloodgood were perhaps cases of fat embolism. He calls attention to the masterly descriptions of Park thirty-three years ago, and expresses the opinion that Bloodgood's cases and those of Park might be interchangeable, so closely do they resemble one another. So that, as he seems to suggest, the crushed limbs and wounds of the soft tissues generally should be explained by fat embolism and the abdominal cases as pure shock. This is the conclusion to which Porter comes after studying the various kinds of wounds seen in France. Pike writes:

"Whatever the other conditions in traumatic shock may be, we find strong evidence for the view that some physical damage within the central nervous system must be included among them. No return of function, or only an extremely slow and imperfect return, is possible, so long as the blood pressure remains low. Neither low blood pressure of the magnitude recorded in cases of surgical or traumatic shock, nor the diminished supply of blood to the brain, is sufficient in itself to produce such speedy death as is often reported."

Guthrie, as a result of his very thorough investigation of all the phenomena of shock, feels inclined to attribute the earlier stages "largely to degradation and fatigue of the bulbar centers," which seemed to show greater anemia than that of the higher centers, as indicated by the persistence of eye reflex. The evidence seems to indicate "fatigue of the nervous tissues as a causative factor of considerable importance."

The treatment of shock resolves itself into measures intended to raise the blood pressure and restore the animal heat. W. T. Porter found remarkable absence of nervous shock in the midst of the most

horrible carnage, so that the psychic factor seemed to play a very small rôle. In the badly wounded he found the blood pressure a most valuable guide, especially the diastolic. When the diastolic pressure fell below 50 m. m. the condition was very grave and resuscitation was doubtful, but when reaction could be brought about recovery was often rapid. Elevation of the lower limbs, and head lowered just below abdomen, was the best position. A special table was devised, which enabled the patient to be kept warm in the proper position. Saline infusion was given for temporary effect, and sometimes adrenalin, given in weak solution continuously, was advantageous, but the saline infusion was temporary in its effect unless the blood pressure could be raised. Porter speaks highly of respiratory suction, or the thoracic pump. By introducing carbon dioxide into the air breathed, the chest was expanded and a powerful traction force exerted on the blood in the liver, drawing it through and establishing reaction in some very bad cases. Cannon, recognizing that the retention of the blood in the splanchnic area was due to the obstruction in the liver, tried pituitrin diffused over the portal vein, with the intention of producing contraction of the smooth muscle and forcing the blood through. Adrenalin was contraindicated, because it contracted the portal terminal vessels in the liver. It is doubtful if the action of pituitrin can be limited to the portal vessels in the abdomen. Cannon's recommendation would necessitate a certain amount of manipulation in order to deposit the pituitrin, and in any but an abdominal operative case would require a special incision. For this reason, then, and also because it would be impossible to confine its action to the portal radicles, it would seem an impracticable procedure. The suggestion of Porter is simple and worthy of trial, because so easy to apply.

Finally, as the alkali reserve is probably reduced in all these cases, the administration of bicarbonate of soda might be tried with advantage. Dawbarn's suggestion of bandaging the limbs is to be employed in conjunction with the respiratory suction. This would have the effect of drawing the blood to the right heart, not only from the vena cava, but also from the portal capillaries. There is one danger suggested by Simonds: the suction might, in fat embolism, draw the fatty globules from the lung to the left auricle, and be there sent with fatal effect to the brain.

In conclusion, shock must be considered a disordered condition of the higher nerve centers, due to the centripetally carried impulses

of irritation resulting from traumatism; the lowered blood pressure, diminished sensibility, pallor, cold skin and feeble pulse are to be explained by the diminished volume of blood sent out by the heart, owing to its being locked up principally in the splanchnic area. In operative work it may be prevented by local analgesia, whenever it can be applied, and, in the traumatisms of accident and war, is to be treated by quieting by morphia the irritation of the nervous centers, by favoring the flow of blood from the stagnant splanchnic area to the heart and brain and by the application of heat to the surface. The flow of blood to the heart is favored by elevating the lower part of the body and by utilizing the thoracic pump by the stimulating effect on respiration of carbon dioxide, as suggested by Yandell Henderson and Porter.

Stimulants seem to have no place in the treatment of shock, but the use of saline infusion, of the transfusion of blood, with the aid of such agents as pituitrin to raise the blood pressure, may be of temporary benefit. Hypertonic salt solution, with the addition of the calcium salts, will be better retained in the vessels than normal salt solution. Hogan's gelatin solutions or Bayliss' addition of acacia to the fluid seem to offer some advantages over the simple physiologic salt solution, but, since the escape from the vessels of the blood plasma is a prominent feature in pronounced shock, as shown by the British Research Committee, it can hardly be expected that any of these solutions, even blood itself by transfusion, will remain in the vessels under aggravated conditions of shock, unless reaction can first be brought about by other measures, such as that suggested by Porter. Such a condition of shock is practically hopeless.

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THE TREATMENT OF PELVIC INFECTIONS SHOULD BE STANDARDIZED.*

By S. M. D. CLARK, M. D., F. A. C. S.,

Professor of Gynecology and Clinical Obstetrics, Tulane University of Louisiana,
New Orleans.

Infections are the most frequently encountered disorders of the female pelvis. Though the subject has been under consideration for generations, the condition at the present day is variously managed, and in many cases treated in a most superficial and haphazard manner.

The human race may civilize and Christianize, but pelvic infection will ever be present. It would appear that the higher we evolve the more prevalent and malignant do these infections become; hence it seems highly important for the profession to agree upon some standard method in their management.

Notwithstanding the ages through which infections have been observed, we still have a healthy minority who defy the accepted dictum, and even among the majority, though they subscribe to its general principles, there is a noted evidence of lack of detail and refinement of the treatment. Many of us are not sure of our pathology. Without this as a compass it is awfully easy to stray from the accepted pathways and allow certain infringements upon the recognized decorum, any violation of which seriously handicaps the end results.

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It is an interesting psychological fact that most of us cannot follow or reason out a pathological process of the female pelvis with anything like the clearness and precision as can be done in say, the upper extremity. The circuit of thought seems to break, there is a lack of continuity; hence, to overcome this regional hindrance, it distinctly aids one to figuratively lay the anatomy of the pelvis on the table.

We are indebted to the dazzling mentality of that medical genius, intellectual giant and surgical marvel, John B. Murphy, for the following splendid pathological resumé and exposé of pelvic infection:

Atria of Invasion.....	{ 1. Vagina. { 2. Cervix. { 3. Uterine surface. { 4. Tubes. { 5. Peritoneum.
Routes of Septic Transmission..	{ Lymph spaces. { Lymph vessels. { Blood vessels. { Continuity of tissue.
Infections in Parturition—	
Vaginal Lacerations:	{ Vaginitis. { Vulvitis and paravulvitis.
Cervical Lacerations:	{ Pelvic cellulitis. { Pelvic lymphangitis (with or without abscess). { Pelvic thrombophlebitis. { Sub-peritoneal cellulitis; acute virulent, fatal. { From operation.
Infections from Uterine Surface:	{ Placental Base: { Thrombophlebitis. { Cellulitis of broad ligament. { Endometritis, acute, infective.
Secondary Infection from Tubes:	{ Mucous surface: Through ostium into pelvic peritonitis. { Through lymph vessels into the broad ligament.
Infections in Abortions and Miscarriages...	{ Thrombophlebitis. { Acute septic peritonitis. { Sub-peritoneal cellulitis. { Intramural infections.
Vaginal Infections From Below.....	{ Neisserian. { Pneumococcus. { Pyogenic. { Tuberculosis. { Colon bacillus.
Infections from Above, Non-Puerperal.....	{ Tuberculosis. { Carcinoma. { Pneumococcic and allied pus infections.

There is nothing peculiar about pelvic pathology; it differs very little, if any, from the other basic laws observed in other regions.

First consider some of the lesions encountered in puerperal infection, for this is a disease with which we are all confronted. The *vagina*, in 90 per cent of deliveries, is subject to damage to a more or less degree; its close proximity to that highly contaminated bacteriological field, the anus, makes it all but impossible to escape infection. Why is it that we do not witness more serious consequences accruing from these infected vaginal lacerations? It is because nature prepares the area by a "coffer-damming edema and swelling that precedes delivery," thus blocking the avenues of dissemination. In the *cervix* it is quite the opposite; this region is abundantly supplied with lymphatics and offers, when injured, the most ideal site for the rapid transit of infection. Through these numerous lymphatics the organisms strike directly through the cervical wall, being checked in most instances by nature's unique process of defense, ending in a parametritis, a lymphangitis, pelvic thrombophlebitis, ovaritis, salpingitis or *sub-peritoneal cellulitis*. It is the latter complication that proves so often fatal in puerperal sepsis, especially if the streptococcus is the organism. The invading coccus drives straight through, shaking off all efforts of nature to block its progress, ascends retroperitoneally, deluges the patient with an overwhelming *septicemia* and ends in a fulminating death; it is the true submarine.

The puerperal cervix has never commanded the bacteriological respect that its anatomical peculiarities justify. It should be approached with the same sacred reverence as we do the abdomen. Fewer examinations and digital manipulations should be made; keep the fingers out of the vagina and make a cervical examination only when imperative. When temperature develops after delivery, one's first thought runs to the interior of the uterus, whereas, in many instances, the trouble is altogether below the internal os, and far removed from the interior of the uterus. How futile are the intra-uterine manipulations in such pathology!

Except in the virulent streptococcal cervical infections, nature usually stops the infectious process, it ending either in resolution or suppuration. Where suppuration follows, this forms the *true pelvic abscess*, being entirely connective tissue in type, with no capsule, and is extraperitoneal. In this type of abscess, drainage gives the same brilliant results as is witnessed in drainage of an

abscess of the leg or arm; there is no infected mucous lining, and, further, these cases may shortly after become pregnant, since their tubes have never been involved.

The *placenta attachment* is the point through which the greater number of infections take place. Here the veins play a more important rôle in transmission than do the lymphatics, since the latter are not nearly so abundant in the fundus as in the cervix. From this seat we encounter our serious cases of thrombophlebitis, developing a week or two weeks after delivery. Though in certain virulent infections grave symptoms may develop from this avenue of invasion, still in the vast number they are not nearly so deadly as the cervical route.

The *tubes* become involved through the infection progressing by way of surface continuity from the endometrium, and, too, may be reached by direct lymphatic invasion. The infected tube sways as the tendril of an octopus and adheres to whatever structure it strikes.

As a result of leakage from the fimbriated end of the tube or direct lymphatic progression, the peritoneum becomes contaminated, resulting in peritonitis. Rarely does this sequence prove fatal, but rather ends in resolution or suppuration; if the latter, then the *pseudo-pelvic abscess* develops, which has quite a different prognosis, as well as pathology, from the true pelvic or simple connective tissue abscess. In the former, the focus of the suppuration lay in the diseased mucous membrane of the tube, hence drainage from below is, as a rule, only a temporizing step, since, with the diseased focus still remaining, recurrences of pus collections are most apt to occur. In puerperal tubal involvement, not of Neisserian origin, the prognosis is very good towards the tubes clearing under proper treatment.

In *abortions and miscarriages*, the routes of infection are along the same lines as in the full-term uterus, only the cervix is not so likely to sustain damage, therefore, does not play as significant a rôle. The source of entrance is mainly through the decidual or placental site and by continuity of the tubes. The one great danger in abortions is that they are not looked upon with the same gravity as is full-term labor. This very position renders them responsible, or causes them to mark the starting point of many a wrecked or disintegrated pelvis. In natural abortions *vaginal examinations* should be made with strict misgivings, and the attendant should constantly keep in mind the fear and dread of conveying infection to an uninfected

field. Further, abortion cases should be supervised with the rigid care as is done in full parturition.

With this brief resumé as a key, it automatically guides one into rational lines of defense. Have we any specific treatment for infections? Other than prophylaxis there is none.

The inflammatory reaction resulting from infection is not a disease *per se*, but is nature's method of defending herself against an invading enemy. Therefore, in a given case of puerperal infection, if one is positive that all secundaries are accounted for, the keynote of the entire plan of treatment resolves itself into one of *a masterly local inactivity* combined with a supportive constitutional treatment aiming at so placing the patient that the maximum chance is given nature for the mustering of her full endowed resistance. Medicine is a study of the laws of nature, and the physician knowing these laws should guide his patient within these limits.

The paramount consideration in puerperal infection is the constitutional side. Once the infection is there, except in saprophytic types, it is useless to chase after the organism that has already buried and hid itself to distant fields. When fever develops the condition is essentially systemic. After years of the most caustic criticism, the *curet* has been about laid on the shelf, but we see other forms of pernicious local activity in the intrauterine douche, vaginal douche, wiping out the uterus, numerous examinations, etc. This is nothing more nor less than treating the family. The pressure of the ever-anxious family forces some into fussing around in the uterus. If one carefully inspects, at the time of delivery, the placenta and membrane and is positive that it is intact, then, from a local standpoint, should trouble develop, keep hands off. Should one be unable to answer for the contents of the uterus, then, except where there is already an exudate, he should explore its interior, having as his creed, "Empty with the least traumatism." The finger, gray cells and surgical sponge forceps are all that is needed. The local side should be quickly settled and attention given to the general constitution. Put the case on the porch, where she gets abundant sunshine and air, fill her with fluids and nourish freely to the limit of her assimilation. Give liquids in abundance by mouth, and, too, by proctoclysis administer the glucose and bicarbonate drip. Control temperature by sponge and ice bag. In every way possible aid the economy to bring forth its best defense, and do not deter the efforts of nature in executing a *vicious local*

meddling. Under this regime the mortality is exceptionally low. When exudates form, under a continuation of the treatment, the great proportion will absorb, or, should they end in suppuration, then drain from below.

Infected abortion cases should be managed on the same broad plan. By carrying out this supportive and rest plan for several weeks, and even months, if need be, many of the badly infected cases will entirely clear; especially is this true of the streptococcal or staphylococcal type, but not equally true of the Neisserian.

In taking up some of the *non-puerperal infections*, the Neisserian organism claims first consideration. Whereas 80 per cent of us realize that no pelvic infection should be radically attacked during the acute stage, still, from a goodly observation in general hospitals, it is my conviction that, even though this teaching is vaguely accepted, it is not rigidly carried out, and, further, the reason why they should not operate does not seem to be entirely clear. Why is it that we do not want to operate during the acute stage? What is to be accomplished by the rest plan and not touching the case until certain stipulated requirements have been fulfilled? These are some of the questions that can well be asked. The bacteriological menace to the peritoneum should stay surgery. In over 90 per cent. of all cases, properly prepared, nature sterilizes the pus collection, so that, even if it be spilled in removal, no untoward results occur and drainage is not necessary.

We seldom use drains in these cases, and when it is used it is not with the idea of coping with infection.

After the employment of this rest plan many of these cases get complete symptomatic relief, even though anatomically they are far from well. This is all that they want. What do they care, as long as they enjoy perfect health? The way nature seals and sterilizes the tubes is beautiful, later converting the pus-tube into hydrops or hydro-salpinx. Often have I gone into the abdomen for other causes and found the most striking picture in the pelvis, in that the entire arrangement is sealed and cleverly tucked away, marking a complete symptomatic triumph for the body defenses.

With the Neisserian infection one cannot expect too much in a curative way by conservative measure; however, they should be given a chance. Even looking at it from the most gloomy angle, often we are able to conserve one or both ovaries, they becoming involved from being in bad company, the tubes.

Isn't the technic difficulty rendered much easier after nature has

cleared away her defense or breastworks, the exudate? Do we have to deal with nearly so many adhesions and raw surfaces when the process is allowed to thoroughly cool? Are we not in a position to practice the maximum conservatism after the segregation of the diseased from the healthy, and lastly, as a result from this scheme, do we not find that in 20 per cent. of cases there is no need of surgery, since there has been a restoration to the normal anatomy?

There is no law so essential to nature in combating an infection as is *rest*. We see its need in every known infection; hence this is the keynote of the plan of battle. After the infection is in the tube or ovary we have no local means of destroying the bacteria. We are entirely dependent upon the body's defensive forces.

Put the case to bed. This should be absolute. Do not allow her to sit up in bed or put her feet to the floor; a rigid recumbent position should be maintained until all temperature has subsided. Nourish freely; put out in the sun and so arrange for free access of air. Control pain and temperature with ice bags and aspirin. Flood with fluids, making use of the rectal route wherever the stomach does not permit. Most of these cases are dessicated, their skin is parched, tongue is dry and coated, and the urine is highly colored, all of which shows the need of fluids.

It is a revelation to see, under this treatment, these cases literally transformed both constitutionally and locally. They autogenously vaccinate themselves and establish their own immunity. Their temperature and blood count reach normal, tongue clears, all pain disappears, appetite returns, they sleep well, and, from having been a poor surgical risk, now possess a wide margin of safety.

Simpson's four commandments to be complied with in these cases before surgical intervention is resorted to are:

1. "Patient shall have recovered from acute illness and shall have required a satisfactory margin of reserved strength."

2. "Temperature shall not have risen above normal a single time for a minimum of three weeks."

3. "There shall have been no marked or persistent rise of temperature following a careful bimanual examination."

4. "The inflammatory exudate surrounding the focus of infection shall have been completely destroyed."

Adding a *fifth* consideration, "That the blood count should be normal," these commands form an ideal working basis in managing pelvic infection. Using these cardinal laws as a guide, Simpson's mortality was less than one-third of one per cent. When oper-

ations were done in the presence of marked exudates, his death rate was 12.5 and slight exudates 4.6. It can never be foretold when exudates are highly infectious.

Without my knowledge, the mortality rate of my hospital service, in which infection plays a large part, was taken and found to be 10 per cent. lower than that of one of my associates, who, though an exceedingly able surgeon, did not apply these commandments to his infected cases. My hospital cases of infection do better than my private ones, since the question of expense causes the latter to become anxious and impatient. After this rest treatment we send many cases home without operations. This was learned in having opened cases who, upon admission, had pelves of masonry, but after rest of several weeks cleared up, and, much to our surprise, upon operating, find only here and there little cobweb adhesions, they marking the whereabouts of the recent battlefield.

From the standpoint of physical and financial economy, what a useful service would the physician in general work render his patients if he properly prepared them prior to submitting them to surgery!

It might be argued, in carrying out this rest plan of treatment, that when the patient is feeling so well she will decline surgical intervention. In answer to this it may be said that, even should she decline to be operated upon, she may be one of the fortunate ones in never having another attack, and, though anatomically abnormal, symptomatically she is well. On the other hand, if her experience has taught her that she is having these exacerbations at repeated intervals, each attack being more severe than the other, but few will decline surgery after being properly prepared.

All general hospitals should have a rest ward for pelvic infections, with one in charge whose surgical activities are confined to patients other than in this ward; and these rest patients should not have surgical relief without his approval, they having fulfilled the Simpson requirements.

When pelvic infections are distributed in the various services, each service being limited in bed space, one finds that the average operator becomes impatient to dispatch the patient and clear his ward; therefore, we witness many of these cases being operated upon when they are totally unprepared.

Finally, let me make the plea that conservatism be exercised in all infections of the pelvis. Nature has endless resources; give the

tubes and ovaries a chance by giving the endowed defenses a chance. If the process of defense is inadequate, as is evidenced in repeated attacks, and the life of the patient is tending toward that of chronic invalidism, then apply surgery after proper pre-operative rest. When, as a result of this thorough pre-operative preparation, it is found at the operation that certain parts of the sexual apparatus can be conserved, it is of equal importance, from the standpoint of end results, that these cases be given a prolonged post-operative quietude.

In closing, it would seem to me that this Society would be doing a service to womankind in lending its influence to the perfection and adoption of a plan looking toward the *standardization of the treatment in pelvic infection*.

DISCUSSION OF THE PAPER OF DR. CLARK.

Dr. P. B. Salatich, New Orleans. I have listened to this paper with considerable interest, and there are several points I would like to discuss in connection with it. First, I want to talk about infections from below and infections from above. Many women we examine, to our surprise, seem to be suffering from some pelvic infection; they have a hymen, but that does not mean they cannot become infected from below because they have a hymen. But these women seem to be good women, with no evidence of infection from below. Quite a lot of work has been done recently about focal infection, and in many cases they have tried to exclude every possible source from below to account for the infection, and conclude it must be from some focus of infection, as the tonsils, teeth, etc. It is known now that a good many of the cystic ovaries, although they look simple and innocent, are of the streptococcus variety.

We are sometimes surprised, in doing a simple laparotomy and resecting an ovary, to find that the patient will die of a violent sepsis. Experiments have been shown that, if some of these ovaries are tapped and pure cultures from the material removed made, it will be found that streptococci will grow there, showing that the same growth that you find in the ovary will be found in the tonsil or some other focus in the body.

With reference to abortion, I agree with Dr. Clark about leaving abortion cases alone. Many times we find it really the family, and not the patient, that prompts us to do something from a surgical standpoint. If you wait a while in these cases, even if the secundines are not out, in a little while the whole mass will come out, and probably it will only be necessary, as I have seen in some cases, to assist nature with a sponge on a sponge-holder to loosen the afterbirth, and the patient would either have a slight temperature or no temperature, or, after two or three days, you will find the afterbirth is entirely separated, and probably right at the entrance of the cervix, and by taking a sponge-holder and simply turning it around in this way (illustrating) you can loosen the afterbirth and it comes out as a whole, and the patient goes on and gets well without a curettage.

I would like to take up the after-treatment and divide the subject

under three heads: First, non-operative; second, preliminary to operation; and, third, operative.

First, or non-operative, or purely medical: By this we understand cases in which every possible means to relieve or cure the patient of either an acute or subacute inflammation. I do not mention the chronic variety, for I do not believe it possible to cure a chronic condition under this form of treatment alone.

Let us take a case, for example, of a patient found to have pain, fever and swelling in one or both adnexa. In these cases we get quicker and better results, as a rule, when treated in an institution than at home. Many cases, where this treatment is tried at home, cause disappointment at the slow results of your efforts. By transferring your patient to an institution you often get results in a few days, the temperature drops, the pains lessen, and your patient is on the road to recovery. Time prevents me from discussing why this occurs, but suffice it to say that in most cases the orders are not carried out as per your directions and absolute rest is not adhered to. The patient is kept constantly in bed, not being allowed to get up for anything. Copious hot douches, it matters not what you use, for it is the heat that does the good. Ice bag to the abdomen, free purgation, giving some saline about every third day. Some preparation of viburnum is helpful, giving it at first at intervals of three hours and then, as the pain subsides, every four to six hours.

I would like to mention a case to show what absolute rest will accomplish. Mrs. A. had an abortion several weeks before I was called to see her; the secundines were retained for several days, patient having a high temperature. When I saw her she had a large, painful mass in both sides, her heart was very bad and she had septic arthritis. I advised moving her to an institution, and while treating her for her general sepsis and myocarditis I gave her treatment for her pelvic infection. At the end of two months no mass could be felt in either side and she was free from pain. She has remained well of her pelvic trouble, only requiring a curettage.

I will mention another case of pelvic infection to illustrate what nature can accomplish in such a case.

Mrs. E. I opened a large pus tube per vaginam, containing at least ten ounces of pus. At the end of the month this patient was free from pain on that side. About three years afterwards I had occasion to do a laparotomy on her and found the tube normal in size; patulous, free from adhesion, and the only evidence that the tube was at one time so badly diseased was a patulous opening about the center of the tube.

As to the second class, or those preliminary to operation, these cases are treated along the same lines as the first class, but after a time, when all or most of the pain subsides, a mass still remains on one or both sides, and the patient remains sterile. The tubes in these cases are probably sealed and operation is the only recourse.

The third or operative class is the more important of all. Many of us remember the time when an ovary was as much thought of as a foreign body. How many women have had their ovaries sacrificed for some nervous or mental disorder. Now, when we have learned the importance of the internal secretions and the rôle played by the ovaries, we think twice before removing an ovary or part of an ovary that can be conserved. The pendulum has swung in the opposite direction. To be conservative so as to preserve as much of the pelvic organs as possible, we

must be very careful in our dissection, or when the structures are finally delivered they will be so lacerated that conservatism will be useless or impossible. By trying to cut away all bands that present with scissors or a sharp knife, instead of tearing away, and by using a sponge folded on a sponge-holder to dissect with, we often can bring the adnexa up and have them in a fair state to retain. Never use instruments on structures that are to remain. As an example to illustrate what rest and conservatism can accomplish, I will report a very interesting case, which I would call ultra-conservatism. This case takes in the second and third classes of this division.

Mrs. E. I was called in consultation to see this woman in May, 1912. Examination revealed a large, hard, tender mass on her right side and one of equal size, but less painful, on her left. This patient was in hard luck, and was very anxious for a child. Her first pregnancy ended in abortion. When I was called she had an extra-uterine pregnancy on her right side and a bad involvement of her adnexa on her left, practically curtailing any possibility of an offspring. I kept her in bed for two months before operation, so as to get her in a good condition and do as much conservatism as possible. At operation I found the ovary and the tube on the right side involved in an extra-uterine pregnancy. These were entirely disorganized and were removed. On the left side the adnexa were adherent to the surrounding structure. With great care I carefully freed and delivered them. The tube contained about four ounces of fluid and the ovary was cystic throughout and about four times its normal size. About one and a half inches of the tube was left in. A half inch of the tube was split and the mucous membrane and peritoneum sutured together. I also turned the flaps back and sutured them so as to keep the opening patulous; about one-quarter of the ovary was left in. This patient has delivered two babies since the operation. I assisted Dr. Lewis in removing about a bucket of extra-peritoneal fibroids from a woman about three months pregnant. The pregnancy continued and the patient delivered a nine-pound baby six months after.

In all cases after operation in pelvic infections rest is very important. An ice bag should be applied to the lower abdomen soon after operation, douches started early, and every care taken, the same as if the case would be one of acute infection. The douching should be kept up for some time after operation, and careful instructions given the patient about proper care and avoidance of intercourse for some time (at least two months) after operation.

Dr. John L. Wilson, Alexandria: I have listened with a great deal of interest to the paper of Dr. Clark and I appreciate very much his description of the way in which these infections take place.

I would like to ask Dr. Clark, in closing the discussion, to tell us how to differentiate the symptomatology of true pelvic abscess, as he describes it, from that of pseudo-pelvic abscess. He also told us that he used to think infection took place in the dome or fundus of the uterus.

We see these cases comparatively often in the work we do in this section. I do not know that I am able to tell whether they have infection of the interior of the uterus or a true pelvic abscess that he has described, or a pseudo-pelvic abscess. I have never been so skilled in diagnosis as to be able to tell my patients which particular condition existed.

Dr. Wallace, Alexandria: This paper is to the point, and confirms an investigation that was made some years ago by a department in this

work of the American Medical Association. A certain communication was addressed to general practitioners and surgeons, gynecologists and obstetricians, both in this country and in foreign countries, asking them what they would do in a case of infection following childbirth in which the fetus and placenta were delivered. In all these classes there were both affirmative and negative answers, showing all classes still make use of the curet. Some of them do it both in this country and in foreign countries. Germany particularly was mentioned. The consensus of opinion, however, was to leave it alone, giving nature an opportunity. A number of hospital records were quoted, showing that many more deaths resulted when curettment was employed than when other methods were used.

I want to mention one other factor. Those of us who do this type of work in the pelvis can do something in a prophylactic way. If we have a patient to contend with whom we fear is going to be infected, we should try to adopt prophylactic measures. I remember when I first graduated in 1910 one of the first cases I had to deal with had a stormy time at delivery. Among other things, she had a hemorrhage or two and a long, protracted labor. I found the afterbirth was adherent, and notwithstanding the application of all the Crede I knew (and considerable force was used), the placenta could not be delivered. I introduced a gloved hand into the uterus and emptied it, but feared I would have infection. This was done in a country home. I tried to think of what might be done, and I felt that drainage was a great factor. I thought probably elevating the head of the bed or putting the patient in the Fowler position was of importance. I did this. I thought stimulation was needed, so I gave strychnin and gave the patient fluids particularly, because she had lost a great deal of blood. I was much gratified about a year after that, in reading a paper by Dr. DeLee, mentioning the fact that in all cases of infection of this type he elevated the head of the bed. I thought it would be well to do that before infection occurred, and now, in every case, I have always elevated the head of the bed if I suspected that infection may occur.

There is one type which is rather different from the type mentioned by Dr. Clark. I was called in consultation to see a lady who had infection following childbirth. On examination I noticed a slight whitish discoloration of the vagina. I put in a speculum and it was a typical membrane. I made a diagnosis of diphtheritic vaginitis as the cause of the trouble. A culture confirmed that diagnosis. I gave her anti-diphtheria serum, which cured the disease.

Dr. O. W. Cosby, Monroe: I do not think anybody could add anything of value to Dr. Clark's paper. It seems to be the last word in the pathology of the subject under discussion. Inasmuch as obstetrics and abortions especially have been introduced into the discussion, there is one other class of cases I do not remember having heard discussed, and that is where, after labor, where the fetus and placenta and secundines have been entirely delivered, the uterus is left clean and there is subinvolution and a large, flabby organ. It usually occurs in a poorly nourished woman. The uterus will turn backward, or it will be more or less kinked, and the lochia becomes foul from stagnation. It is retained in there, as there is not sufficient drainage; that is a case where the Fowler position would be especially beneficial. Some one about six or seven years ago called attention to this and advocated placing in the uterus a large glass drainage tube. I have had occasion to use that treat-

ment in several instances, and it gave splendid results, with no instrumentation whatever. There did not seem to be any laceration or abrasion, but there was a low-grade fever. The treatment consisted of introducing a large drainage tube, preferably of glass, and putting the patient in the Fowler position and leaving her absolutely alone, and the temperature dropped immediately.

Dr. M. F. Bledsoe, Port Arthur, Texas: I appreciate the courtesy extended to visitors to discuss this subject. It is intensely interesting to me. I feel very much as though Dr. Clark has covered the subject, and there might be too much tendency on the part of some to disagree with him, when it would seem at times better, when the subject has been so ably presented, not to discuss it, because the fundamental facts were presented properly. There is no question about that. We appreciate, however, the fact that the time has not been so very long when we were agreed that non-interference in the acute pelvic infections was the proper course to pursue. That has been a standard to go by. As we progress we are more disposed to let these cases alone, so far as operative measures are concerned. The point I gained from listening to the paper was with reference to when to operate, if we operate at all. If I understood him correctly, if the uterus is clean, taking the puerperium as it occurs, if there are no retained membranes, it is better for the physician to stay out of the uterus.

In case of miscarriage, where the cervix has been bruised, ordinarily speaking, where there is retention of membranes, early gentle curettement is in line. If the infection has spread into the lymphatics, if it be a true pelvic infection, the abdominal operative work should be deferred, as we gain so much by that delay.

My only reason for rising is to add to the thought that men from other parts of the country believe as Dr. Clark does along this line and are practicing along this line.

I have a good professional friend in my town who has been irrigating the uterus with dilute alcohol and has obtained good results from it. I have tried it, and when I thought I had gotten good results there was some question about it, considering the overwhelming opinions of men of larger experience, and I have been inclined to follow their experience and watch, and oftentimes, especially in this class of cases, I have been rewarded by my watchful waiting. There is no question but what abdominal operative work in acute pelvic infection is hazardous, and there can also be no question but that the risk is nil when the infection has subsided. We know that we do not mind scattering pus from an old chronic pus tube. You do not care to drain, and you know you are all right. An acute infection should be left alone, as far as possible. Of course, in extreme cases, where it seems waiting will not accomplish anything, vaginal drainage is always indicated.

I wish to compliment Dr. Clark on his paper, and his conclusions, to my mind, are absolutely correct.

Dr. W. D. Kelly, Winnfield: I would like to ask Dr. Clark as to the value of the vaccins used in a septic condition following a normal labor or miscarriage. Of course, this subject is a little out of his line, but since I know that Dr. Clark makes a specialty of it I would like to have him tell us if he uses any of the vaccins, such as are employed in country practice and are put up by the manufacturing pharmacists.

Dr. Clark (closing): It has always been my conviction that, upon occasions such as this, papers should be prepared upon subjects of common interest, upon diseases with which we come in daily contact.

It does us good to review our methods, exchange ideas and leave for home with possibly a newly added step in treatment.

In these discussions it is surprising to see how many physicians claim to utilize the rest plan or conservative method of coping with infections of the pelvis, when, as a matter of fact, my experience teaches me that in a general way this plan is rarely carried out in detail, and when analyzed is found to be minus many of the small points of refinement, these very points being the factors that decide good or bad results.

The four cardinal points of Simpson's should be rigidly followed; they are so valuable as a guide that they should be named Commandments.

When these standardized laws are obeyed there will be less mutilating pelvis surgery performed, and, further, many will escape the necessity of an operation.

Dr. Wilson asked the differential diagnosis between true and pseudo-pelvic abscesses. It is not at all times possible to differentiate before the drainage is done. As a general rule, though, in the true pelvic abscess, there is not as much peritoneal disturbance and the mass can be felt infiltrated in the para-metrial tissue with more definite focalization. Also, on palpation, the fundus and tubes move more freely and with less pain.

My experience with vaccins has not been very elaborate, but, in short, it may be said that from the observation of my staff the general impression is that they have no special virtue. We feel that in the Neisserian type of infection the vaccins in conjunction with rest do seem to hasten resolution.

PROCEEDINGS ORLEANS PARISH MEDICAL SOCIETY

SYMPOSIUM ON CRIMINAL ABORTION.

MORAL ASPECT OF CRIMINAL ABORTION.*

By REV. JOHN D. FOULKES, S. J., New Orleans.

GENTLEMEN—The ethics taught in our medical schools are in some respects admirable, and perhaps superior to those of any other learned profession. They inculcate a delicate regard for personal feelings, the duty of safeguarding the interests of a patient, the maintenance of a recognized professional etiquette, not only toward brother physicians, but towards the ministers of religion. Unfortunately there is often an absence of sound philosophical training in the preparatory schools from which students enter the medical curriculum of universities, and this leads to the adoption, in most instances, of a sort of stoical view of life, which finds its portrayal in the characters admirably but delusively drawn for us by the

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pagan historians and philosophers of ancient Greece. It is a high standard, yet it represents a false estimate of the value of human life, and hence is all the more disastrous, inasmuch as it tends toward the denial of immortality and moral responsibility. I would account in this way for the prevalence of malpractice. While I should think that the universal condemnation of methods of destruction, indicated by the very name given to the crime, would rouse the reflecting mind to the consciousness of the evil, and make an honorable body of men unite in protest against it, still we must not forget that the physician is not the regulator of social habits. He finds them and their evil results, which he is asked to remedy. The appeal of a man or a woman in pain, with the prospects of disgrace, and often permanent misery, as a consequence perhaps of momentary imprudence, or strong though misplaced affection, is a powerful one, and must be weighed in the balance of temptation when we judge the ordinary practitioner. It lies with us priests, ministers of the gospel to purify the social atmosphere and to exercise a proportionate influence upon the medical men with whom our ministry brings us habitually in contact. While we rarely attempt to interfere with the physician or to anticipate his judgment in matters of physical ailments, still we are often called upon to give them the views of the Catholic Church on malpractice and the reasons of her opposition to it. It is, therefore, a very great honor indeed for me to address this learned body of men on the moral aspect of a subject which is of vital importance to our nation and to every nation of the habitable globe. I mean abortion.

The church to which I belong teaches that it is never lawful to kill the innocent, directly, or, in other words, it is never lawful to kill the innocent when the death is intended in itself, or when it is inflicted as a means to the attaining of some other object. Such an act is expressly forbidden by God. "The innocent and just person thou shalt not put to death" (*Exodus*, xxiii) Reason, too, teaches this truth, for, if it were lawful directly to kill the innocent, it would be so when such a death would be of great advantage to some government. But, even to save the State, an innocent man's life must not be taken directly, for the State exists that good men may lead honorable and peaceful lives; the State is for the good citizen, not the good citizen for the State. Not even the good of the State, then, makes it right to take an innocent man's life, and, if that does not justify the act, nothing does.

The death of the innocent may be permitted, not intended, when it follows from some action lawful in itself which also produces an equally immediate and good effect and when this counterbalances the evil effect. This, again, is but the application of the principle of a double effect, and it is evident from what has been said before. The general of an army who orders the bombardment of a beleaguered town knows that his order cannot be executed without killing perhaps many innocent non-combatants, yet the action is not unlawful.

Casual homicide, which was not intended in itself, but which was the consequence of doing some dangerous action, as furious driving in a frequented street, is imputable to the agent, if he adverted to the probable danger of killing some one. If such probable danger did not exist, or was not adverted to, casual homicide will not be imputable in consequence, although, if the action be forbidden by law, even on other grounds than the chance of its causing another's death, and some one is killed by it, some laws punish it as manslaughter.

Bearing these principles in mind we can now treat of the Catholic Church's attitude relative to abortion and certain surgical operations concerned with child-bearing. Abortion is the premature ejection of the living fetus. The human fetus reaches maturity about nine months after conception, but it is capable of living even if born a considerable time before maturity. A child may live when born at seven months, or even somewhat earlier, especially if artificial means are taken for preserving its life. When the fetus is ejected at such a time that, in the judgment of a skilled physician, it will probably live, this is called acceleration of birth, rather than abortion in the strict sense. We are here concerned with the lawfulness of procuring abortion and of performing such operations as craniotomy and embryotomy, which destroy the life of the fetus. There is only question of the living, not of the dead fetus, as is obvious.

Inasmuch as it is never lawful directly to kill the innocent, it is never lawful directly to procure abortion at a time when there is no probability that the fetus can live outside the mother's womb. This is clear, for the fetus is a human being, with a human soul, which, as is commonly held by theologians, is infused into it by God at the moment of conception; it has, then as much right to live as any one else, and it certainly is innocent of all personal

crime. To deprive it directly of the medium in which alone it can live is to kill it directly, just as to deprive a man of air by plunging him under water is to kill him directly. The direct procuring of abortion, then, is never allowed, inasmuch as it is the direct killing of the innocent, and intrinsically wrong. In the same way, anticipated homicide and a grievous sin is committed whenever means of whatever sort are taken to prevent conception. However, just as the direct killing of the innocent is lawful for a cause, so a pregnant woman, who is suffering from disease, or tumor, or any complication which threatens life, may lawfully adopt the necessary means to save herself, even if what is a remedy for her causes the death of the fetus. In all these cases we have but the application of the principle of a double effect—the mother is not bound to sacrifice her life by abstaining from the remedy indicated, especially as her own death would also involve the death of the child.

Now, the question arises, "What is to be done in a case where the uterus with the fetus is locked in the upper strait, as may happen through retroversion, sinking and prolapsus of the pregnant womb." If all other known means of turning or replacing the uterus fail, the Catholic moral theologian believes it to be allowable to induce abortion indirectly by procuring the discharge of the waters, or by the perforation of the fetal membrane. On the same principle, Catholic moral theologians think that it is lawful to remove an ulcerated womb, which is threatening the life of a pregnant mother, though the operation causes the death of the fetus, whose further growth would cause the certain death of the mother. All who unlawfully procure abortion incur the penalty of excommunication, the absolution of which is reserved to the Bishops, by the Constitution "*Apostolicæ Sedis*" of Pius IX.

Craniotomy, or any other similar operation which has for its immediate and direct effect the destruction of the life of the fetus, is a direct killing of the innocent and is never allowed. If the child is already dead, there is, of course, no difficulty in permitting craniotomy or embryotomy; but if it is still alive it is not lawful to kill it, even if otherwise both child and mother were certain to die. Evil must not be done that good may come of it. The end does not justify the means. Some medical practitioners consider the fetus, until it is born, as a portion of the mother which may be destroyed to save her life. This view is not in keeping with Christian principles, according to which the child has a soul of its own and has its own independent right to live.

Here, too, many medical schools teach that such operations are lawful if the mother's life cannot otherwise be saved, because the child may be considered a materially unjust assailant of its mother's life and so be lawfully killed; or because, when there is a conflict of rights, the stronger right should prevail. The Catholic Church, however, asserts that in no sense can it be allowed that the child is an unjust assailant of its mother's life; it is where nature placed it, through no fault of its own, and it has a right to be there, and to be born. If either is an unjust assailant of the other's life, it is the mother, who voluntarily undertook the obligations of motherhood. In the same way, when the stronger of two conflicting rights prevails, this is due to the fault of the other party, and such fault is out of the question in this case. Hence, no operation which tends directly to the destruction of the life of the fetus is lawful.

When the child cannot be born in the natural way, and the life of both mother and child is in danger, Cæsarian section or some similar operation may be, and should be, performed, by which the lives of both may very probably be saved. Of course, this operation of Dr. Porro by which the uterus is removed, together with the fetus, requires some special reason to make it lawful, for such mutilation of the mother is only allowed when it is necessary in order to save life.

In all operations which involve danger to the life of the child, the living fetus should be baptized by the doctor or nurse while it is still in the womb.

In conclusion, I will sum up the Catholic Church's attitude towards the fetus. The principle upon which she decides the moral value of operations which involve the extinction or preservation of life is that neither the patient nor the practitioner has the right, deliberately, to take life, unless it be in necessary—that is, in direct—defense against an unjust attack upon one's own life. The child, although not yet fully developed, has life, and the rights which the possibility of future life implies. It is not in any sense an unjust aggressor. It is not only innocent, and more so than its parent, but is in a condition, sick and weak, which demands our deep sympathy. The probability that the mother will die, that perhaps both she and the infant will die before many weeks, does not give to any person the right directly to anticipate God's decrees by procuring or deliberately hastening the death of either child or mother. If the contrary principles were to be maintained, then

our municipal authorities should have the right, in certain circumstances, to kill all persons who, by reason of contagious diseases, are morally sure to bring death upon their roommates or the members of their immediate family with whom they live. The physician may feel that he owes the application of all his wit and energy to the patient whom he undertakes to restore to health. That is well. But God has drawn the line for him at the taking of life under whatever plea. He may hold life, but he cannot take it, except under a divinely-manifested sanction, and such a sanction the physician has no more than the parent. Medical ethics, which admit the taking of life directly, are, in this respect, a return to the Spartan method, by which the State assumed the right of killing every cripple or infant or child, lest it become a burden to the commonwealth. For the physician who has no religion which bids him recognize God as the arbiter of life, to whose designs we must leave the prolongation or the cutting short of man's temporary conditions, the pagan standard is an easy assumption; but it is contrary even to the maternal instinct under normal conditions, for if you ask the mother—the true guardian of her offspring—she will in nearly every case say, "Save the child; do what you can, even if I must die." And this instinct is from God. It is Christian, and saves the race in every true sense of the word.

Here is the last decision given by the Church on this vital question; it is dated May 4, 1898:

"1. Acceleration of birth is not absolutely forbidden. In order to render it lawful, however, there must exist not only a just cause for it, but it must be done at such a time and by such methods as, under ordinary circumstances, are calculated to safeguard the lives of both mother and child.

"2. Abortion (in the sense of propelling or extracting an immature and living fetus so as to deprive it thereby of life) is not permissible. Cesarean section at a time when the fetus is viable is lawful.

"3. Laparotomy, when necessary to extract an ectopic fetus, is allowable; always with the understanding that the physician is bound to do his utmost to safeguard the lives of mother and child."

The Catholic Church does not undertake or limit a law which depends on God, the Author of Life. She simply states what the discretion and skill of a physician admit as an effort to conserve life without violation of the divine precept, "Thou shalt not kill."

REPORT OF COMMITTEE ON CRIMINAL ABORTION.*

By N. F. THIBERGE, M. D., Chairman.

The Committee on Criminal Abortion, appointed to draw up a law with a wider scope than the present one, with a view of having it adopted at the next meeting of the Legislature, begs to report:

In the first place, we want to thank Dr. Frederick B. Green, Secretary of the A. M. A., who has kindly forwarded his whole file on the subject for our researches; Dr. Henry Scherck, of St. Louis; Dr. F. F. Laurence, of Columbus, Ohio; Dr. C. S. Bacon, of Chicago; Dr. A. R. Craig, of Chicago; as also our District Attorney and Mr. Herbert Waguespack, for valuable assistance.

With this report is a complete list of the laws on criminal abortion for each individual State, as also a copy of the Federal laws on the use of the United States mail for criminal purposes, and noted on "*File A*"† in our report.

Under the "*Caption B*"† is a list of condensed laws and penalties for each State.

Under the "*Title C*"† is a list of all convictions for the crime of criminal abortion in each State as we are able to gather them from the rich literature kindly loaned us by Dr. Green. Within the last fifteen years Louisiana has been able to secure one conviction.

"*File D*" enumerates the good points found in the laws of Missouri, Indiana and Colorado. We found these especially well worded.

The following named States have already laws against advertising for fraudulent purposes:

Colorado	Louisiana	Wisconsin
Kansas	North Dakota	Iowa
Nevada	Wyoming	Michigan
New Jersey	Indiana	Kentucky
Washington	Missouri	Rhode Island
Idaho	Nebraska	Oregon
Minnesota	Ohio	

Other States having laws against dishonest advertising:

Alabama	Utah	Pennsylvania
New York	North Carolina	West Virginia
Montana	Tennessee	Maryland
South Dakota	District of Columbia	Massachusetts
Hawaii	Illinois	Oklahoma
California	Connecticut	Virginia

* Read before the Orleans Parish Medical Society, February 25, 1918. [Received for publication March 5, 1918.—EDS.]

† These three lists are on file for reference, but too voluminous for publication here.

As a result of our researches, the Committee considers the following requisites for a good, effective law on criminal abortions:

1. Revocation of license of any one convicted of criminal abortion. [This is already enforced in Louisiana.]
 2. Make it necessary to prove the existence of pregnancy. [This also is enforced in Louisiana.]
 3. Punish those who induce the woman to take the medicine.
 4. Punish those who offer to give, sell, advertise or manufacture drugs, medicines or articles to produce abortion.
 5. Punish attempts at abortion. The crime should be held complete when the drug is administered or the operation is performed, regardless of whether the woman or child die or miscarriage results.
 6. Make the dying declaration valid. We strongly recommend the adoption of a law similar to that of the State of Missouri, whereby the dying declaration is accepted as competent evidence not only in trials for abortion, as is the present law of Louisiana, but also in cases of attempted abortion.
 7. Allow physician in attendance to testify.
 8. Punish those advertising or making free distribution of any medicine or article to secure abortion or regulate menstruation.
- Nos. 3, 4, 5, 7 and 8 are embodied in laws proposed.
No. 6 is strongly recommended.

In "*File E*," appended to this report, is the draft of a letter which our Dr. O'Hara, a member of this Committee, has consented to send to each practicing physician in the city, instructing him on the method of obtaining a valid dying declaration.

"*File F*" is a draft of a letter which the Committee recommends to send to the clergy of this city, urging them to talk against the practice of criminal abortion.

Your Committee, after careful perusal of the literature, adopted the following suggestions:

1. Making abortion and its cause a reportable disease, as is now adopted in France, since last year.
2. The making of pregnancy, with the expected time of delivery, reportable to the Board of Health.
3. That the profession extend respect and reverence to every pregnant woman and discourage, privately and publicly, those who try to bring ridicule or contempt upon pregnant women.
4. To make it obligatory to teach medical jurisprudence and medical ethics in all medical colleges.

5. To enact and enforce a law against distributing upon streets and other public places obscene advertising, and have the mail withheld by postoffice authority and the newspaper forbidden by the government to publish the advertisement of such as advertise for criminal purposes.

6. To induce the Coroner to send to each physician practicing in his district a special letter, the form of which is described in "*File E.*"

7. To induce all the clergymen to raise the moral standard of their community.

8. To guard the birth rate of the nation by frequent discussions on this subject, by discouraging discussion on birth control, as such discussion may tend to encourage criminal abortion. In its investigation the Committee was startled to find that it was estimated that upwards of five million criminal abortions were performed yearly in the United States, and that *for every child born at term there are 2.5 abortions.*

9. And last suggestion. An ordinance be passed similar to that of St. Louis, whereby all lying-in hospitals and sanitariums, and those who administer rooms for confinement, be compelled to obtain a permit from the Board of Health, their object having to be clearly stated, and whereby such institutions could be inspected and closed at the discretion of the Board of Health.

In "*File G,*" which will be read by the Secretary, is the proposed new law.

In conclusion, the Committee has found, in its last analysis of the subject, the greatest amount of good that can be accomplished in controlling criminal abortion is done by the individual physician in a personal appeal to his patient. It is remarkable how the voices of the authorities the world over harmoniously blend in giving this advice: "Appeal to the woman herself, to her love of truth and innocence; raise her moral sense; educate her on the physical as well as the moral ills consequent to this practice." When a woman appeals to him to relieve her of her fetus, so that she may escape the care, the burden and the responsibility of a large family, or to satisfy the demands of fashionable society or to facilitate her pursuit after pleasure, he should respond by ascertaining her reasons prompting such a request, and gently, kindly and patiently convince her of the folly of such excuses and give advice measured to the individual temperament with tact and with care. The family

physician's opinion carries weight, and his advice, if given with tact and sincerity and supported by appropriate arguments, will surely be heeded.

Respectfully submitted,

(Signed) NARCISSE F. THIBERGE, M. D., *Chairman*;
PAUL GELPI, M. D.;
E. L. LECKERT, M. D.;
W. H. KNOLLE, M. D.

SYNOPSIS BY THE COMMITTEE OF "FILE B."

Questions.

- Question 1. Of what crime is the woman herself guilty?
- Question 2. What is the charge for killing the child while intending to kill the mother?
- Question 3. Of what crime is the person guilty who gives away, sells or advertises abortive drugs and drugs to prevent conception?
- Question 4. Of what age must the fetus be?
- Question 5. What is the charge and penalty when the woman herself dies?
- Question 6. May offending physician have his license revoked?
- Question 7. May dying declaration be used?
- Question 8. Is the physician who gives subsequent treatment allowed to testify?

N. B.—On answer sheet read (see next page):

M.—Murder.
m.—Misdemeanor.
Rev.—Revocation.

FILE D.

Synopsis of Punishment.

- No. 1 Punishes inducing abortions.
- No. 2 Punishes advertising for same.
- No. 3 Punishes selling or exposing for sale anything to procure abortion or prevent conception.
- No. 4 Revokes his medical certificate.
- No. 5 Punishes those applying for same.
- No. 6 Dying declaration admissible.
- No. 7 Punishes those having in their possession any instrument.
- No. 8 Punishes woman herself.
- No. 9 Punishes manufacturer.

Colorado.....	1, 2, 3, 4.	
Illinois.....	1, 3, 4,	No. 3, especially well worded.
Indiana.....	1, 2, 4, 5.	No. 2, especially well worded.
Iowa.....	1, 4.	
Kansas.....	1, 2, 4.	
Louisiana.....	1, 4.	
Massachusetts.....	1, 2, 6, 4.	
New Jersey.....	7, 2, 5.	
New York.....	1, 8, 4, 9.	
Oregon.....	1, 4, 3.	No 3, especially good against advertisers who regulate the monthly flow.

Answers to Questions.

1	2	3	4	5	6	7	8
Alabama.....			Any period of gestation.....	M	.....	Yes	No
Alaska.....			Must be pregnant.....	m	.....	Yes	No
Arizona.....		Misdemeanor.	Any period of gestation.....	M	Revocation of license.....	Yes	No
Arkansas.....	Manslaughter	Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
California.....		Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
Connecticut.....		Misdemeanor.	Must be pregnant.....	m	.....	Yes	No
Colorado.....		Misdemeanor.	Any period of gestation.....	M	Revocation of license.....	Yes	No
Delaware.....		Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
Florida.....		Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
District of Columbia.....		Felony	Any period of gestation.....	m	.....	Yes	No
Georgia.....		Misdemeanor.	Any period of gestation.....	M	Revocation of license.....	Yes	No
Idaho.....	Murder.	Felony	Any period of gestation.....	M	Revocation of license.....	Yes	No
Illinois.....		Felony	Any period of gestation.....	m	.....	Yes	No
Indiana.....		Misdemeanor.	Must be pregnant.....	M	Revocation of license.....	Yes	No
Indian Territory.....		Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
Iowa.....		Misdemeanor.	Any period of gestation.....	m	Revocation of license.....	Yes	No
Kansas.....		Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
Kentucky.....		Misdemeanor.	Any period of gestation.....	M	Revocation of license.....	Yes	No
Louisiana.....		Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
Maine.....		Felony	Any period of gestation.....	M	Revocation of license.....	Yes	No
Maryland.....		Felony	Any period of gestation.....	m	.....	Yes	No
Massachusetts.....		Misdemeanor.	Any period of gestation.....	m	Revocation of license.....	Yes	No
Michigan.....	Manslaughter	Felony	Any period of gestation.....	M	Revocation of license.....	Yes	Yes
Minnesota.....	Manslaughter	Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
Mississippi.....	Manslaughter	Misdemeanor.	Must be quick with child.....	M	Revocation of license.....	Yes	No
Missouri.....		Misdemeanor.	Any period of gestation.....	M	Revocation of license.....	Yes	No
Montana.....		Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
Nebraska.....		Misdemeanor.	Any period of gestation.....	M	Revocation of license.....	Yes	No
Nevada.....		Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
New Hampshire.....		Misdemeanor.	Must be pregnant.....	m	Revocation of license.....	Yes	No
New Jersey.....	Murder.	Felony	Must be quick with child.....	m	.....	Yes	No
New Mexico.....		Felony	Any period of gestation.....	M	Revocation of license.....	Yes	No
New York.....	Manslaughter	Felony	Any period of gestation.....	m	.....	Yes	No
North Carolina.....		Felony	Any period of gestation.....	M	Revocation of license.....	Yes	No
North Dakota.....		Felony	Any period of gestation.....	m	.....	Yes	No
Ohio.....	Manslaughter	Felony.	Any period of gestation.....	m	Revocation of license.....	Yes	No
Oklahoma.....		Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
Oregon.....	Manslaughter	Felony.	Must be pregnant.....	m	Revocation of license.....	Yes	No
Pennsylvania.....		Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
Rhode Island.....		Misdemeanor.	Any period of gestation.....	m	Revocation of license.....	Yes	No
South Carolina.....		Misdemeanor.	Must be pregnant.....	m	.....	Yes	No
South Dakota.....	Manslaughter		Any period of gestation.....	m	Revocation of license.....	Yes	No
Tennessee.....			Any period of gestation.....	M	.....	Yes	No
Texas.....	Misdemeanor.		Any period of gestation.....	m	Revocation of license.....	Yes	No
Utah.....		Felony	Any period of gestation.....	M	Revocation of license.....	Yes	No
Vermont.....		Misdemeanor.	Any period of gestation.....	m	.....	Yes	No
Virginia.....			Intent to produce abortion con- sidered felony.....	m	.....	Yes	No
West Virginia.....			Intent to produce abortion con- sidered felony.....	M	.....	Yes	No
Washington.....			Any period of gestation.....	m	Revocation of license.....	Yes	No
Wisconsin.....	Manslaughter		Any period of gestation.....	m	.....	Yes	No
Wyoming.....	Manslaughter.	Misdemeanor.	Any period of gestation.....	m	Revocation of license.....	Yes	No

LAW OF ABORTION IN MISSOURI.

There is no penalty fixed for a woman who performs an abortion on herself. She is not guilty of any crime under our statutes.

The wilful killing of an unborn quick child by any injury to the mother, which would be murder if the mother's death resulted, is made manslaughter in the first degree, punishable by imprisonment for not less than five years in the penitentiary. This is a felony.

By the law of 1907 it is made manslaughter in the second degree, a felony, punishable by imprisonment in the penitentiary for not less than three nor more than five years, for any person to give, sell or administer to a woman, to procure for her to take any drug, medicine or article, to use upon her or advise her to use any instrument or method or device to procure or promote a miscarriage or abortion, provided it results in the death of such woman or quick child, unless, if the party who uses or advises the medicine or means is a licensed physician and finds it necessary to preserve the life of the woman or child, or unless, if the one who does so is not such a physician, it is advised to be necessary by such licensed physician.

It is further provided by the same law that, if the attempt does not result in such death, the crime shall be the felony of abortion and shall be punished by imprisonment in the penitentiary for not less than three nor more than five years or by imprisonment in jail for not more than one year, or by fine not exceeding \$1,000, or by both such fine and imprisonment; and it is further provided that any physician who is guilty of the act shall be liable to have his license to practice revoked by the State Board of Health in their discretion.

A new section was also added in the law of 1907, providing that in prosecutions for such offenses the dying declaration of the woman whose death was caused by the abortion shall be received as evidence, under such restrictions as surround the admissions of such declarations in murder trials—that is, the woman must be shown to have been of sound mind at the time of making the statements offered, and the declarations must have been made in anticipation of death, the victim being convinced at the time that she is about to die.

This same section also provides that no one shall be convicted of the offense on the dying declaration of such woman without some corroboration as to the fact of the abortion having been committed; and it also provides that any physician or surgeon who attended the woman after the abortion shall be allowed to testify to any facts relevant to the issue, and shall not be disqualified as a witness on account of the privileged relation of physician and patient.

There are also statutes in this State prohibiting the sale, giving away or advertising of any medicine or article for procuring an abortion or preventing conception. Such offense is made a misdemeanor, punishable by fine of not more than \$1,000 nor less than \$50, or by imprisonment in jail for not more than one year, or both. It is stated, however, that the section shall not be so construed as to affect legitimate medical colleges or standard medical books or the practice of regular practitioners or druggists in their legitimate business. It is further made a misdemeanor to receive or carry or send any such things or advertising matter, and it is punishable by fine of not more than \$1,000 nor less than \$50, or imprisonment of not more than one year in the county jail, or both. The destruction of all raw materials, tools and implements used to manufacture such articles is authorized by our statutes.

Another section of our law prohibits advertising, or keeping for sale

or gratuitous distribution, any secret drug or nostrum for destroying pregnancy or preventing conception. It is made a misdemeanor, punishable by fine not exceeding \$1,000 or imprisonment in jail not exceeding six months, or both.

Section 1825 (Laws of Missouri, 1907):

"Any person who, with intent to produce or promote a miscarriage or abortion, advises, gives, sells or administers to a woman (**whether actually pregnant or not**), or who, with such intent, procures or causes her to take any drug, medicine or article, or uses upon her or advises to or for her the use of any instrument or other method or device to produce a miscarriage or abortion (unless the same is necessary to preserve her life or that of an unborn child; or if such person is not duly a licensed physician, unless the said act has been advised by a duly licensed physician to be necessary for such a purpose), shall, in event of the death of said woman or any quick child whereof she may be pregnant, being thereby occasioned, upon conviction, be adjudged guilty of manslaughter in the second degree and punished accordingly (that is, by imprisonment in the penitentiary for a period of not less than three nor more than five years), and, in case no such death ensue, such person shall be guilty of the felony of abortion, and upon conviction be punished by imprisonment in the penitentiary for not less than three nor more than five years, or by imprisonment in jail not exceeding one year, or by fine not exceeding \$1,000, or by both such fine and imprisonment; and any practitioner of medicine or surgery, upon conviction of any such offense as is above defined, shall be subject to have his license or authority to practice his profession as physician or surgeon in the State of Missouri revoked by the State Board of Health in its discretion."

LAW OF LOUISIANA.

Abortion.—807. Whoever shall feloniously administer, or cause to be administered, any drug, potion, or any other thing, to any woman for the purpose of procuring a premature delivery, and whoever shall administer, or cause to be administered, to any woman pregnant with child, any drug, potion, or any other thing, for the purpose of procuring abortion or a premature delivery, shall be imprisoned at hard labor, one to ten years. (Louisiana Laws, 1896, p. 196.)

Revocation, Medical Certificate.—Sec. 16. If any person legally practicing medicine or midwifery in this State shall be convicted of a crime, or shall commit any act of gross unprofessional misconduct, either of the State boards shall have the power to institute proceedings for the purpose of having the certificate or permit withheld by such person revoked, and if it shall be shown that such physician or midwife has been convicted of a crime or has done an act of unprofessional misconduct, the court shall have the power to revoke the certificate or permit of such person. (Acts 1914, No. 56, p. 145.)

FILE E.

New Orleans,.....1918.

Dr.....

Dear Doctor—When called upon to handle a case on whom a criminal abortion has been performed, you can aid us in the following manner.

1. When death is impending and while the patient is still in her right mind, notify this office. By so doing, your interests are safeguarded and

at the same time you give us an opportunity to place the responsibility where it belongs.

2. When, on account of conditions, a notification of this office seems inexpedient, secure the following dying declaration, after first convincing the patient that you have no hope of her recovery:

Questions:

What is your name?

I have diagnosed your case and you are in immediate danger of death and there is no hope of your recovery.

Do you appreciate the seriousness of your condition?

Do you believe that you are about to die?

Have you any hope of recovery?

Do you understand these questions fully?

Are you able to give a clear account of the cause of your illness?

Answer:

Believing that I am about to die, and having no hope for recovery, and of my own accord, make the following statements while sound of mind and in full possession of my faculties. [Here follows the statement of the patient.]

Witnesses:

Signature.....

.....
.....
.....

3. If still in doubt as to what should be done, advise with the Chairman of the Criminal Abortion Committee, who will safeguard your interests.

Faternally,

.....Coroner.

FILE F.

To the Rev.....

.....Church, New Orleans.

Rev. Dear Sir—Knowing your interest in whatever tends to elevate the moral standard of our community, the Orleans Parish Medical Society, through the undersigned Committee, respectfully and earnestly requests your coöperation in the effort it is making to combat the unspeakable practice of criminal abortion. (Five thousand criminal abortions are taking place annually, corresponding to two and one-half abortions for every full-term baby born in this city.) It would ask you to urge your congregation to extend respect—nay, reverence—to every pregnant woman; to ask them to discourage both privately and publicly those who ridicule and condemn women in pregnancy. Your own good judgment will suggest the way to do this in suitable words, without giving offense to innocent hearers, while being sufficiently clear to be understood.

Thanking you,

.....

FILE G.

Proposed Law.

SECTION 1. *Be it enacted by the General Assembly of the State of Louisiana, That whoever shall, for the purpose or with the in-*

tent of procuring a premature delivery or abortion, sell or lend, or offer to sell or lend, or advise to use or in any form, advertise or expose for sale, either orally or in writing, or who shall in any manner or form distribute any drug, potion or instrument, or any other article or thing to any person, shall be guilty of a felony and, on conviction, shall be punished by imprisonment in the State Penitentiary for a term not exceeding two years.

SEC. 2. *Be it enacted by the General Assembly of the State of Louisiana,* That whoever prints or publishes an advertisement of any secret drug or nostrum purporting to be for the exclusive use of females, or which cautions females against their use when in a condition of pregnancy, or in any way publishes any account or description, or any secret drug or nostrum purporting to be exclusively for the use of females, or for preventing conception or procuring abortion or miscarriage, shall be fined \$500 and imprisoned ten days to six months.

SEC. 3. *Be it further enacted, etc.,* That nothing in this Act shall be construed as amending or repealing Act No. 24 of 1888, entitled "An Act to amend and re-enact Section 807 of the Revised Statutes of 1870, relative to attempt to procure premature delivery or abortion," or any part thereof.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

Edited by DR. L. R. DE BUYS, Secretary-Treasurer.

ANNOUNCEMENT

Section on Medicine and Therapeutics—Dr. J. L. Adams, Monroe,
Chairman.

Section on Tropical and Preventive Medicine—Dr. J. J. Ayo, Raceland,
Chairman.

"The Bass-Watkins Agglutination Test for Typhoid"—Dr. Foster M. Johns, New Orleans.

Section on Bacteriology and Pathology—Dr. J. J. Wymer, New Orleans,
Chairman.

"Epidemic Meningitis, with Special Reference to Types of Meningococci and the Transmission of the Disease"—Dr. C. W. Duval, New Orleans.

To open discussion. Dr. Wm. H. Harris; Dr. Jos. J. Wymer, New Orleans.

Section on Diseases of Children—Dr. Geo. Kreeger, Lake Charles,
Chairman.

“Practical Congenital Syphilis”—Dr. Chas. J. Bloom, New Orleans.

To open discussion: Dr. H. E. Menage, New Orleans.

“Acute Nephritis in Childhood”—Dr. Solon G. Wilson, New Orleans.

“Bone Regeneration in Children”—Dr. John F. Oechsner, New Orleans.

“Vomiting in Infancy and Childhood”—Dr. L. R. DeBuys, New Orleans.

Section on Eye, Ear, Nose and Throat—Dr. T. J. Dimitry, New Orleans,
Chairman.

“The Importance of an Early Diagnosis and Treatment of Middle Ear Diseases”—Dr. M. P. Boebinger, New Orleans.

To open discussion: Dr. C. A. Weiss, Baton Rouge; Dr. Homer Dupuy, New Orleans.

(The subject on the eye to be furnished later)—Dr. H. Dickson Bruns, New Orleans.

To open discussion: Dr. J. L. Scales, Shreveport; Dr. I. F. Mitchell, Alexandria.

“The Running Ear”—Dr. Geo. Taquino, New Orleans.

To open discussion: Dr. J. A. Blanchard, Shreveport; Dr. J. T. Crebbin, New Orleans.

“The Cross-Eyed Child Neglected”—Dr. J. Hume, New Orleans.

To open discussion. Dr. D. C. Iles, Lake Charles; Dr. E. R. Gandy, Alexandria.

Section on Nervous and Mental Diseases—Dr. C. S. Holbrook, Jackson,
Chairman.

“Society Largely Responsible for Some of the Most Potent Factors of Nervous and Mental Diseases”—Dr. J. Cheaton King, A. B., M. D., Atlanta, Ga.

To open discussion: Dr. J. A. O'Hara, New Orleans.

“Shell Shock”—Dr. Chas. S. Holbrook, Jackson, La.

To open discussion: Dr. Marcel J. deMahy, New Orleans.

Section on Gynecology and Obstetrics—Dr. W. D. Phillips, New Orleans,
Chairman.

“The Outdoor Clinic of the Lying-in Hospital: Its Aims, Its Achievements”—Dr. J. W. Newman, New Orleans.

To open discussion: Dr. Wm. D. Phillips, New Orleans.

“A Gynecological Gunshot Wound”—Dr. Maurice J. Gelpi, New Orleans.

“The Treatment of Eclampsia”—Dr. Hilliard E. Miller, New Orleans.

“The Interposition Operation for Prolapsus Uteri”—Dr. C. Jeff Miller, New Orleans.

(Title to be furnished later)—Dr. S. M. D. Clark, New Orleans.

Section on Diseases of the Skin—Dr. J. N. Roussel, New Orleans,
Chairman.

“Effect of Lemon Juice in Pellagra”—Dr. J. N. Roussel, New Orleans.

Section on Genito-Urinary and Rectal Diseases—Dr. H. W. E. Walther, New Orleans, Chairman.

“Social Aspect of Venereal Diseases”—Dr. M. W. Swords, New Orleans.

To open discussion: Dr. Oscar Dowling, New Orleans.

“Is Syphilis Curable?”—Dr. A. Nelken, New Orleans.

To open discussion. Dr. Paul Gelpi, New Orleans.

Section on Radiology and Radiotherapy—Dr. Adolph Henriques, New Orleans, Chairman.

“Paper on Radium Therapy”—Dr. E. C. Samuel, New Orleans.

“The Present Status of the Röntgen Diagnosis of Pulmonary Tuberculosis”—Dr. Adolph Henriques, New Orleans.

Section on Surgery and Anatomy—Dr. J. M. Batchelor, New Orleans, Chairman.

“A Simple Surgical After-Treatment”—Dr. E. L. Sanderson, Shreveport, La.

“A New Technic for Suspension of the Kidney”—Dr. Rawley M. Penick, Shreveport, La.

“The Function of the Gall-Bladder. An Experimental Study”—Dr. F. C. Mann, Rochester, Minn.

“Ruptured Gastric and Intestinal Ulcers”—Dr. H. W. Kostmayer, New Orleans.

“The Inguinal Approach for the Radical Cure of Femoral Hernia”—Dr. Lucian H. Landry, New Orleans.

“The Surgical Treatment of Pott’s Disease”—Dr. P. A. McIlhenny, New Orleans.

“Local Anesthesia in Operations for Goiter”—Dr. A. A. Keller, New Orleans.

(Title to be furnished later)—Dr. C. G. Cole, New Orleans.

ORLEANS PARISH MEDICAL SOCIETY NOTES

RECOMMENDATIONS TO DELEGATES OF THE LOUISIANA STATE MEDICAL SOCIETY.

The following recommendations and instructions to the delegates to the Louisiana State Medical Society were offered by Dr. Theodore J. Dimitry and unanimously adopted at the regular meeting of the Orleans Parish Medical Society held Monday, November 26, 1917:

“Before proceeding with the election of delegates and alternates to the next meeting of the Louisiana State Medical Society, I have thought out a little plan which may meet with the approval of this Society, and, if accepted, it would mean the instruction of its delegates to carry out these aims. In the election of delegates it is desired not to embarrass any one who may object to my suggestions.

“My appeal is for the good of State medicine and a desire to cast aside any interest other than that which would be best for the betterment of organized medicine. Hence, I move that the Orleans Parish Medical Society instruct its delegates to extend an invitation to the members of

the Louisiana State Medical Society to accept the hospitality of the Orleans Parish Medical Society and join us in a common domicile.

“By extending this invitation we are moving to a mutual benefit. The Orleans Parish Medical Society has a well-constructed, heated and conveniently located domicile, with numerous medical periodicals, reading-room and a medical reference library which we are proud of. And, I ask, shall we offer these advantages where they may serve a great benefit, or is it the desire of this assembly to retain these solely for ourselves?

“The State Medical Society should have a place which it could call ‘home,’ and we have it in our power to assist in establishing the ideal of every member of organized medicine. Our brethren would be pleased to know when on a visit to New Orleans there is a congenial home for them, with the convenience of writing material, medical periodicals and a medical library.

“The State Medical Society stenographer might have offices here, making it handy for the members to obtain information and may reasonably serve their wants. The expense of maintenance would be small, certainly not greater than has been provided in the past budget of the Society, and, in addition, offering many improved facilities to the members, as also the pleasure of a social intercourse, which undoubtedly should be encouraged.

“Hence, for the above considerations, I move that the delegates be instructed as stated above.”

MEDICAL SECTION, LOUISIANA STATE COMMITTEE COUNCIL OF NATIONAL DEFENSE.

The Medical Section, as authorized by the Council of National Defense at Washington, D. C., has been operating since August, 1917. A classified list has been made of the majority of the medical profession of the State. About 25 per cent. of the profession has failed to reply to the several communications sent them.

A fairly accurate list of Louisiana physicians in service has been made and kept up to date, with notation of changed location whenever information has been available.

Three bulletins of information have been issued and sent to all of the physicians in the State, to the officials of other States and to others interested. The Medical Section has been in close contact with the Medical Reserve Corps examiners and with officials of the government and of the Council of National Defense, with a view to coöperation.

A contribution of \$1.00 was solicited from each physician of Louisiana. After repeated requests for such aid for the expense of the Medical Section, a total of \$86.00 has been received. The Executive Committee of the Medical Section is grateful to the eighty-six physicians who have helped. The expenses of the com-

mittee have so far amounted to about \$300.00, all of which has been paid, by the \$86.00 contributed and by the personal advances of the Chairman and the Secretary of the Medical Section.

Unless a further contribution is afforded by the physicians of the State the Medical Section must discontinue its activities, as there is apparently no other source of revenue and the officers of the Medical Section are not willing to pay all of the expenses.

The mobilization of the profession of the State and the further usefulness of the Medical Section in coördinating with the office of the Surgeon General for service at home and for the interest of those who have gone into service abroad are expected of the profession of this State. The material effort of the Medical Section hitherto will permit its fulfillment of these obligations when the profession of the State remaining at home is willing to afford the means to that end.

Any contributions of aid may be sent to the Executive Committee, P. O. box 778, New Orleans.

ISADORE DYER, Chairman.

OSCAR DOWLING, Vice-Chairman.

L. R. DEBUYS, Secretary.

E. L. LECKERT, Assistant Secretary.

NEWS AND COMMENT

THE LOUISIANA STATE MEDICAL SOCIETY will hold its annual meeting in New Orleans, April 16, 17 and 18, under the presidency of Dr. Clarence Pierson, of Jackson, La. Sessions will be held at the Hutchinson Memorial Building of the Tulane College of Medicine.

THE AMERICAN GYNECOLOGICAL ASSOCIATION will meet in Philadelphia, under the presidency of Dr. John G. Clark, May 16, 17 and 18.

TUBERCULOSIS OF STOCK ANIMALS.—According to the report of the chief of the Tuberculosis Division, Bureau of Animal Industry, of 14,000,000 cattle and sheep slaughtered during the fiscal year ending June, 1917, 3,397,000 were tuberculous. He thinks that swine are infected from skim milk returned from creameries, and that this by-product should be pasteurized.

WAR COURSE IN DENTISTRY.—The American Institute of Dental Teachers, at its recent meeting in Pittsburg, appointed a committee

to formulate a standard course for dental colleges. Dr. Abram Hoffman, of Buffalo, is the secretary.

GOVERNMENT TAKES OVER SANITARIUM.—The Jackson Health Resort at Dansville, N. Y., is now a government hospital, with Major Arthur H. Crosbie, of Boston in charge. It will be known as Hospital No. 18. Soldiers and officers of the United States from home and abroad will be received as patients. When improvements are completed, there will be accommodations for 500.

JOURNAL DISCONTINUES.—The *St. Paul Medical Journal* has been discontinued in order to clear the field for *Minnesota Medicine*, the journal of the Minnesota Medical Association.

IT WAS AGREED at a meeting held in Paris on November 3, 1917, of delegates of the International Surgical Society from Belgium, France, Great Britain, Serbia and the United States of America, that (1) the International Surgical Society be dissolved after the publication of the volume of transactions of the meeting held at New York City, April 14, 1917; should any money remain after the publication of the volume such money will be divided *pro rata* among members; each member of the Austro-German group will receive his share, but the money belonging to members from other nations will be retained and applied to some object of scientific reparation in Belgium. (2) A new society will be created after the war on a similar basis, to be called the "Inter-Allied Surgical Society." Surgeons of neutral countries may also be elected members.

AMERICA OUTDOING GERMANY IN CHEMICAL PRODUCTS.—A report by Prof. D. D. Jackson, of Columbia University, states that the war has given a great impetus to the manufacture in this country of lenses, pharmaceuticals, synthetic perfumes, flavoring extracts, saccharine and many other products, and that, with the proper legislation, this country can compete with any other nation in the manufacture of chemicals. We are able, says the report, to make our own laboratory glassware of a quality superior to that of Germany or Austria. Our plants are now producing large quantities of phenol, every pound of which before the war came from Europe.

DEATHS OF PHYSICIANS IN 1917.—The *Journal of the A. M. A.* for January 9 reviews the reports of 2,300 deaths of physicians noted in the *Journal* during 1917. Senility, heart disease, cerebral hemorrhage, pneumonia, accidents, nephritis and surgical operations

were the chief causes of deaths, and the average age was 60 years, 8 months and 13 days.

ANESTHETISTS NEED NOT BE PHYSICIANS.—An opinion has recently been handed down by the Attorney General of Wisconsin stating that "the giving of an anesthetic under the direction of a physician does not require the anesthetist to hold a medical license, and this practice is, therefore, not to be considered a violation of the statute."

WOMEN NURSES ON HOSPITAL SHIPS.—For the first time in American history, women nurses are to be employed on hospital ships. The "*Comfort*" and the "*Mercy*" have been fitted with accommodations for 300 patients each, and special quarters for the women nurses.

YALE MEDICAL SCHOOL HAS ADEQUATE ENDOWMENT.—President Arthur Hadley, of Yale University, recently announced that the Yale Medical School now has at its disposal the sum of \$2,568,812, donated through the generosity of its friends, which insures the perpetuation of the school and makes possible its affiliation with the New Haven Hospital.

TOURO INFIRMARY NURSES GRADUATE.—On March 9, 1918, twenty-six nurses received their diplomas from the Touro Infirmary Training School for Nurses. The occasion was marked by simple exercises, the Rev. Max Heller delivering the invocation and Dr. Robert Booth Acker, assistant surgeon, United States Public Health Service, making the principal speech of the evening.

CAMPAIGN AGAINST VENEREAL DISEASE.—The United States Public Health Service has invited the States to help in a campaign against venereal disease and to prevent the next increment of the draft from having the high venereal rate of the last. The following plans have been suggested: The establishment of venereal clinics by health authorities in contiguity to army cantonments; the creation of new or the utilization of existing hospital facilities for the treatment of those infected; legal enactment; and public education, in which the problem is to be relieved of all moral and social issues and placed solely on a basis of control of communicable diseases. The Health Service will work on the evidence that the prevention of infections in the military is largely dependent on the degree with which these infections are prevented in the civil community.

"THE EYES OF THE NAVY."—Binoculars, spy-glasses, telescopes, sextants and chronometers are still urgently needed by the navy, even though the first appeal, sent out several weeks ago through the

daily press, resulted in the receipt of over 3,000 glasses of various kinds. The United States has heretofore been obliged to rely almost entirely upon foreign countries for its supply of such articles, but these channels are now closed, and as no stock is on hand in this country to meet the present emergency it has become necessary to appeal to the patriotism of private owners. All such articles should be securely tagged, with name and address of the donor, and forwarded by mail or express to the Hon. Franklin D. Roosevelt, Assistant Secretary of the Navy, care of Naval Observatory, Washington, D. C.

CHRISTIAN SCIENTIST BRINGS SUIT.—Miss Grace M. Trankla filed a suit in New York City recently for \$12,150, the sum alleged to be due her for services rendered. This is said to be the first suit ever brought by a Christian Science practitioner.

UNITED STATES HOSPITAL IN JAPAN.—The American Red Cross has accepted the offer of St. Luke's International Hospital at Tokio, Japan, to use its establishment in case it is needed by the military or naval forces of the United States.

CHARITY HOSPITAL OFFERS SERUMS FOR SALE.—The laboratories of the Charity Hospital announce the distribution of tetanus and of diphtheria antitoxins to the public through the drug stores, in sterile syringes ready for administration and at prices commensurate with the cost of production. The superintendent of the hospital asks the coöperation of the profession.

THE WARDEN McLEAN AUDITORIUM was dedicated at Camp Greenleaf, Fort Oglethorpe, on March 11. Through the generosity of Mrs. William McLean, of Philadelphia, a building capable of holding some 1,800 medical officers in training has been erected in connection with the Medical Officers Training Camp at Fort Oglethorpe. On the occasion of the opening of the auditorium, among the notables present were Gen. W. C. Gorgas, Lieut. Col. Wm. Welch, Lieut. Col. Victor C. Vaughan, Col. E. L. Munson, Drs. Franklin Martin, E. P. Davis and others. The invocation was delivered by Bishop Gaylor, of Tennessee.

TULANE UNIT (BASE HOSPITAL 24) landed "somewhere in France" on March 6. This unit left New Orleans in September, remaining at Fort Oglethorpe several months before orders to move.

SICKLES FUND.—The commission in charge of the Sickles Dispensary Fund asks the aid of physicians in limiting the service of this fund to the needy poor, for whom this philanthropy was in-

tended. The large service rendered by the Sickles Fund has invited abuse of its charity by those who do not fall within its application. Physicians should be careful in endorsing prescriptions for free distribution, except in cases of those patients known to be too poor to pay for medicine.

DOCTORS HELD FOR SELLING NARCOTICS.—Drs. A. A. Robert Bankowsky, Ira E. Booth, John L. Corish and M. A. DiPreta were arrested and arraigned before a United States Commissioner in New York as the result of information obtained by a naval surgeon from a sailor who had been obtaining drugs.

BANQUET TO DR. STEPHEN SMITH.—A banquet to Dr. Stephen Smith, of New York, the "Grand Old Man" of American medicine, in honor of his ninety-fifth birthday, was held at the Battle Creek Sanitarium, Mich., on February 19. Dr. Smith gave a most interesting account of the changes he had witnessed in the methods of his profession. About one hundred medical officers from Camp Custer were present.

PREVALENCE OF TUBERCULOSIS IN THE UNITED STATES.—The National Association for the Study and Prevention of Tuberculosis, according to its latest estimate based on a revised conception of the prevalence of the disease, as the result largely of the examination of recruits and drafted men for the new army and navy, figures that there are probably between two and three million active cases of tuberculosis in the United States. About two per cent. of the men of draft age examined in the country at large were found to be tuberculous. At present 43,000 beds are available for tuberculosis in the United States, and 50,000 more hospital beds are needed to cope with the problem.

NEW ORLEANS HEALTH REPORT.—The City Board of Health, in its February report, stated that communicable diseases reported showed a decrease of 56 per cent., as compared with February of last year, and the number of cases and the deaths from communicable diseases had shown a decrease of 60 per cent.

REMOVALS.—Dr. V. L. Sandifer, from Victoria to Mansfield, La.

Major A. W. Williams, M. C., U. S. A., from Fort Benjamin Harrison, Indianapolis, Ind., to 3425 Newark street, Washington, D. C.

Dr. J. D. Hartzo, from Atlanta to Bivins, Texas.

BOOK REVIEWS AND NOTICES

A Compend of Bacteriology, including **Pathogenic Protozoa**, by Robert L. Pitfield, M. D. Third edition. P. Blakiston's Son & Co., Philadelphia.

The author brings up to date, in a concrete form, essential information on a most important subject. There has been rearrangement of the chapters and much new matter has been included in this edition. The book can be recommended to students of medicine and also to practitioners who require information on pathogenic bacteria and the fundamentals of bacteriology.

C. C. BASS.

The Clinical Pathology of the Blood of Domesticated Animals, by Samuel Howard Burnett, A. B., M. S., D. V. M. Second edition. The Macmillan Company, New York.

This book is written especially for students and practitioners of veterinary medicine, and no doubt will be found a useful and almost necessary standard textbook on the subject. It is very well written indeed, and every page shows the touch and influence of a trained observer.

The work will also be very useful to students and investigators of the blood of man and the diseases affecting it.

At the end of each chapter a long list of references to the literature on the subject of that chapter is given.

C. C. B.

A Reference Hand Book of the Medical Sciences, by various writers. Third edition. Revised and rewritten. Edited by Thomas Lathrop Stedman, A. M., M. D. Volume VIII. Wm. Wood & Co., New York.

This volume completes the present revision of this standard work of reference. We can commend the exceptional care and effort of the editor in the assembling of material and of men in the contributions to the several volumes which have been included in the publication, and it is a privilege to congratulate him on the result. It is difficult to keep pace with the medical literature of the day, but, altogether, the Reference Handbook has managed to hold its own in maintaining its value as a guide to the current practitioner. The work is concluded with a comprehensive general index.

DYER.

PUBLICATIONS RECEIVED

J. B. LIPPINCOTT COMPANY, Philadelphia and London, 1918.

The Spleen and Anemia, by Richard Mills Pearce, M. D. Sc. D., with the assistance of Edward Bell Krumbhaar, M. D., Ph. D., and Charles Harrison Frazier, M. D., Sc. D.

Blood Transfusion, Hemorrhage and the Anemias, by Bertram M. Bernheim, A. B., M. D., F. A. C. S.

W. B. SAUNDERS COMPANY, Philadelphia and London, 1917.

Infant Feeding, by Clifford G. Crulee, A. M., M. D.

Tumors of the Nervus Acousticus, by Harvey Cushing, M. D.

A Clinical Manual of Mental Diseases, by Francis X. Dercum, A. M., M. D., Ph. D.

The American Illustrated Medical Dictionary, by W. A. Newman Dorland, A. M., M. D., F. A. C. S. Ninth edition, revised and enlarged.

Materia Medica: Pharmacology: Therapeutics: Prescription Writing, by Walter A. Bastedo, Ph. G., M. D.

A Practical Textbook of Infection, Immunity and Specific Therapy, by John A. Kolmer, M. D., Dr. P. H., M. Sc., with an introduction by Allen J. Smith, M. D., Sc. D., LL. D. Second edition, thoroughly revised.

American Addresses, by Sir Berkeley Moynihan, M. S., F. R. C. S.

The Third Great Plague, by John H. Stokes, A. B., M. D.

War Nursing, by Minnie Goodnow, R. N.

Clinical Lectures on Infant Feeding. Boston Methods, by Lewis Webb Hill, M. D.; **Chicago Methods**, by Jesse Robert Gertsley, M. D.

THE YEARBOOK PUBLISHERS, Chicago, 1917.

Practical Medicine Series. Volume IX: **Skin and Venereal Diseases**, edited by Oliver S. Ormsby, M. D., and James Herbert Mitchell, M. D. Volume X: **Nervous and Mental Diseases**, edited by Hugh T. Patrick, M. D., and Lewis J. Pollock, M. D.

LEA & FEBIGER, Philadelphia and New York, 1917.

A Pocket Formulary, by E. Quin Thornton, M. D. Eleventh edition, revised.

THE MACMILLAN COMPANY, New York, 1918.

Typhoid Fever, by Frederick P. Gay.

WASHINGTON GOVERNMENT PRINTING OFFICE, Washington, D. C., 1918.

Public Health Reports. Volume 33, Nos. 5, 6, 7, 8 and 9.

Report of the Health Department of the Panama Canal. November and December, 1917.

MISCELLANEOUS.

Report of the Philippine Health Service. January 1 to December 31, 1916. (Manila Bureau of Printing, P. I.)

Proceedings of the Medical Association of the Isthmian Canal Zone. (Panama Canal Press, Mount Hope, C. Z.)

The Poison Growth of Prussianism; Frenzied Liberty, by Otto H. Kahn.

REPRINTS.

Radium in the Treatment of Certain Types of Uterine Hemorrhage and Uterine Fibroids; Ligation or Excision of the Pelvic Veins in the Treatment of Puerperal Pyaemia, by C. Jeff Miller, M. D., F. A. C. S.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City
of New Orleans, for February, 1918.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	2		2
Intermittent Fever (Malarial Cachexia)			
Smallpox			
Measles		4	4
Scarlet Fever			
Whooping Cough			
Diphtheria and Croup	1	1	2
Influenza	22	14	36
Cholera Nostras			
Pyemia and Septicemia		1	1
Tuberculosis	67	42	109
Cancer	24	4	28
Rheumatism and Gout	1	1	2
Diabetes	7		7
Alcoholism			
Encephalitis and Meningitis	7		7
Locomotor Ataxia	1		1
Congestion, Hemorrhage and Softening of Brain	17	6	23
Paralysis	1	1	2
Convulsions of Infancy			
Other Diseases of Infancy	9	3	12
Tetanus		2	2
Other Nervous Diseases	5	1	6
Heart Diseases	61	48	109
Bronchitis	7	2	9
Pneumonia and Broncho-Pneumonia	74	44	118
Other Respiratory Diseases	1	2	3
Ulcer of Stomach	2	1	3
Other Diseases of the Stomach			
Diarrhea, Dysentery and Enteritis	7	5	12
Hernia, Intestinal Obstruction	5	1	6
Cirrhosis of Liver	5	5	10
Other Diseases of the Liver		2	2
Simple Peritonitis	1		1
Appendicitis	5	2	7
Bright's Disease	16	16	32
Other Genito-Urinary Diseases	9	4	13
Puerperal Diseases	6	4	10
Senile Debility	2	1	3
Suicide	5	1	6
Injuries	14	12	26
All Other Causes	24	22	46
TOTAL	408	252	660

Still-born Children—White, 15; colored, 17; total, 32.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1,000 per Annum for Month—White, 17.48; colored, 29.08; total, 20.62. Non residents excluded, 18.58.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure 30.14

Mean temperature 63.

Total precipitation 2.21 inches

Prevailing direction of wind, south.



NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

EDITORS:

CHARLES CHASSAIGNAC, M. D.

ISADORE DYER, M. D.

COLLABORATORS:

C. C. BASS, M. D., Prest., Amer. Soc. of Tropical Medicine..... }
JOHN M. SWAN, M. D., Secty. American Soc. of Tropical Medicine..... } *Ex Officio*
L. R. DE BUYS, M. D., Secretary Louisiana State Medical Society..... } *Ex Officio*
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H. D. BRUNS, M. D., Tulane University of Louisiana.
C. F. CRAIG, M. D., Capt., U. S. A.
S. T. DARLING, M. D., Federated Malay States.
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E. M. DUPAQUIER, M. D. (Paris), Tulane University of Louisiana.
A. G. FRIEDRICH, M. D., New Orleans, La.
J. T. HALSEY, M. D., Tulane University of Louisiana.
JOS. HOLT, M. D., New Orleans, La.
F. A. LARUE, M. D., Tulane University of Louisiana.
OTTO LERCH, M. D., Tulane University of Louisiana.
E. S. LEWIS, M. D., Tulane University of Louisiana.
R. C. LYNCH, M. D., Tulane University of Louisiana.
E. D. MARTIN, M. D., Tulane University of Louisiana.
R. MATAS, M. D., Tulane University of Louisiana.
AUGUSTUS McSHANE, M. D., Greenwood, Miss.
PAUL MICHINARD, M. D., Tulane University of Louisiana.
C. J. MILLER, M. D., Tulane University of Louisiana.
F. W. PARHAM, M. D., Tulane University of Louisiana.
E. A. ROBIN, M. D., Tulane University of Louisiana.
W. H. SEEMANN, M. D., Tulane University of Louisiana.
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EDMOND SOUCHON, M. D., Tulane University of Louisiana.
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J. A. STORCK, M. D., Tulane University of Louisiana.
R. P. STRONG, M. D., Harvard University.
ROY M. VAN WART, M. D., Tulane University of Louisiana.

Vol. LXX

MAY, 1918

No. 11

EDITORIAL

MEETING OF THE STATE MEDICAL SOCIETY.

The thirty-ninth annual session of the Louisiana State Medical Society was held in New Orleans on April 16, 17 and 18, the House of Delegates beginning their sittings one day earlier.

It was feared that, owing to the disorganization produced by war conditions, the meeting would prove disappointing in many particulars, yet, while not equalling some past records, it was much more satisfactory than was expected.

The total attendance was 373, of whom 180 registered from the city, 148 outside of the city, and 45 guests.

Nearly fifty articles were listed in the several sections, the greater number of which were read and elicited interesting discussions.

At the public session, on the last evening, the President, Dr. Clarence Pierson, read the annual address; Mr. P. H. Saunders, of New Orleans, spoke on "Thrift and War Savings Stamps"; three most timely addresses were delivered, respectively, by Major Isadore Dyer, M. R. C., on "The Medical Reserve Corps," Col. Henry Page, M. C., on "The Medical Profession in the Great War," and Major Frank Simpson, M. R. C., on "The Medical Reserve Corps and Medical Military Activities."

A luncheon was tendered daily to the members at the Louisiana Retreat, the Tulane College of Medicine, and the Touro Infirmary, in the order named.

The chief entertainment was given on the second evening, so as to be available to the largest number possible, in the form of a stag smoker at the Chess, Checkers and Whist Club.

The exhibitors were as numerous as usual, covering all lines of interest to physicians, and made a good showing, while apparently doing a good business.

All told, it was a satisfactory meeting and, under the circumstances, it could be called a successful one.

THE MEDICAL RESERVE CORPS.

In a recent communication, Surgeon General Gorgas requests us to call attention to the urgent need of additional medical officers for the army.

The JOURNAL has already done so repeatedly, but, as the war progresses, the need for more officers becomes more and more apparent. While the medical profession has responded as no other profession, future response must be greater. The department has almost reached the limit of medical officers available for assignment, and the number is entirely inadequate to meet the demands of the next draft.

So far, the United States has been involved only in the preparatory phase of this war. We are now about to enter upon the active or fighting phase, which will make enormous demands upon the man-power of the country, the conservation of which will depend mainly upon an adequate medical service.

Surgeon General Gorgas states that he cannot emphasize too strongly the supreme demand for medical officers, and requests our assistance in obtaining these officers. It is now a question of the mobilization of the profession, and all those eligible should apply as soon as possible to the board nearest to their home.

The requirements for commission in the Medical Reserve Corps are that the applicant be a male citizen of the United States, graduate of a reputable school of medicine, between twenty-two and fifty five years of age, morally, physically and professionally qualified.

All who are fit should apply at once.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

THE MEDICAL ASPECTS OF GALL-BLADDER DISEASE.*

By C. L. ESHLEMAN, M. D., New Orleans.

A thorough discussion of gall-bladder disease can hardly be confined to the diseases involving the gall-bladder alone, or even to the gall-bladder and its ducts. Such a discussion would hardly be comprehensive without taking into consideration conditions involving other structures in the immediate vicinity of the gall-bladder. I refer to such structures as the pancreas, stomach, duodenum, liver and appendix, any of which can intrude themselves into the picture of gall-bladder troubles with much prominence.

For fear of treading in the domains of my gastro-enterological confrère who is to follow me, I shall confine my few words to the conditions which involve the gall-bladder and its appendages, merely referring, *en passant*, to the gastric and enteric aspects. Two symptoms, jaundice and pain in the right hypochondrium or epigastrium, tend always to direct our attention to the gall-bladder or its appendages as the source of trouble. It is, of course, a mistake, however, to think that the absence of either or both of these symptoms negatives disease of the gall-bladder or ducts. As proof of this, we

*Read before the Orleans Parish Medical Society, March 11, 1918. [Received for publication April 8, 1918.—Eds.]

have only to bear in mind the frequency with which gall-stones are encountered at autopsy, when no suspicion of their presence had been entertained *in vivo*. Furthermore, surgical exploration frequently shows gall-stones when the previous history had shown merely vague, uncertain digestive derangements without pain or jaundice.

Taking up the various conditions met with in connection with the gall-bladder, we cannot pass without notice the commonest cause of jaundice, namely, catarrhal jaundice.

A benign, self-limited disease of from two to six weeks' duration, occurring chiefly in early youth, it is generally supposed to be due to mild catarrh, beginning in the duodenum and extending up the common bile duct, so diminishing the lumen of this duct as to cause partial occlusion or complete blocking of it. A plug of dried mucus occluding the opening of the duct at the ampulla of Vater is considered by some to be the important cause of the obstruction. The only case seen at autopsy by Osler presented this obstructive phenomenon.

The least serious of all diseases of the ducts causing jaundice, and the easiest of all to diagnose, jaundice, with slight fever and without pain, in a young person, subsiding in two to four weeks, means simple catarrhal jaundice. The only warnings which need be issued are these, if the jaundice persists longer than six weeks: Begin to be suspicious of something else. Emaciation, and such other symptoms as pains, chills, fever and sweats should be considered as an indication of other trouble. The diagnosis of acute catarrhal jaundice in one over forty should be made with caution.

Being a self-limited disease, as described, it is obvious that treatment is of little importance. I restrict the diet somewhat, give plenty of fluids, and keep the bowels open with a mild saline cathartic.

Actual inflammation of the gall-bladder—*acute cholecystitis*—exists in several forms, depending on the nature or virulence of the infecting organism. Either the colon bacillus, the typhoid bacillus, the pneumococcus or the pyogenic cocci are responsible. The presence of such organisms in the gall-bladder, whether arriving through an ascending infection from the intestines, by way of the common bile duct, or through the circulatory route, should be considered the most important element in the production of a cholecystitis. Such an infection may be only part of a general infection involving all the bile ducts—a true cholecystitis—or it may be a localized infec-

tion, confined to the gall-bladder alone. Stagnation of the bile in the bladder, from any cause whatever, is a strong contributory factor.

The course that such an inflammation runs may be, first, merely a simple, mild catarrhal cholecystitis; second, a purulent infection, with probable involvement of all the rest of the biliary tract; or, third, a still more virulent fulminating gangrenous inflammation may exist.

Extremely mild grades of cholecystitis probably exist, with few symptoms, none definite enough to make possible the recognition of the trouble. I firmly believe that a positive diagnosis in these mild cases is often purely problematic. How frequently we are consulted for slight attacks of indigestion or flatulence, or a mere feeling of fullness in epigastrium or right hypochondrium, with little or no fever, and perhaps no nausea or vomiting, all symptoms subsiding in twenty-four or forty-eight hours. Who is to say, in such cases, that we are not dealing with a mild cholecystitis, with or without gall-stones? Yet, the more probable diagnosis is simple error in diet, or reflex gastric stagnation, or gastric neurosis, or auto-intoxication, or "biliousness," whatever such may be. Is it not possible that some of our cases of so-called "grip," with slight disturbance of temperature for a few days, and nothing more, are also of this nature?

In moderately severe cases of acute cholecystitis the symptoms are often typical and a diagnosis readily made—pain in the right hypochondrium, rigidity and tenderness over the gall-bladder region, nausea and vomiting, leucocytosis, and at times an easily palpated tender, soft mass emerging from below the surface of the liver are characteristic. Jaundice may be present if the inflammation extends into the bile ducts, producing a cholangitis, or if gall-stones are present and causing obstruction; without these fairly common complicating features, however, jaundice is a negative feature. Pain, on the other hand, is a strongly prominent feature. Sometimes a high appendix or a low gall-bladder causes error in diagnosis. Fortunately, rest, diet, ice bags and watchful waiting comprise the treatment of both conditions.

In most cases this acute catarrhal form subsides in two weeks. Unfortunately, it often becomes chronic, with a strong tendency to the formation of gall-stones. In the severe, rapidly fulminating cases of cholecystitis, with gangrene or perforating gall-bladder, the diagnosis is more difficult, and peritonitis following a ruptured

appendix or a perforated peptic ulcer are likely to cause confusion. Fortunately, quick surgical intervention is the treatment in either case.

A subsiding cholecystitis is likely to become *chronic* and be associated with a general infection of the bile ducts. In such cases, the low-grade infection and tendency to bile stasis are the important factors in the formation of gall-stones, which are *frequently*, but not *invariably*, present. On the presence of stones, and this associated low-grade infection of the biliary tract, depend the further symptoms. The mechanical effects of gall-stones, or their migratory effects, producing spasm of the gall-bladder and ducts, with pain, are usually not difficult of diagnosis. On the other hand, the so-called reflex disturbances of the stomach and intestines, causing hyperchloridia, nausea, vomiting, stasis, eructation, loss of weight and a host of other ill-defined symptoms, present a picture sometimes as difficult to interpret as any problem in medicine.

Repeated attacks of mild cholecystitis, with resulting adhesions about the gall-bladder and ducts and duodenum, often cause a similar train of symptoms and the same diagnostic difficulty. Perforation of a stone—an acute procedure—rarely gives the internist cause for prolonged study or worry.

While Mayo has emphasized the fact that gall-stones are rarely latent, and Moynihan has likewise laid stress on the importance of the early reflex symptoms of indigestion, the so-called “inaugural symptoms,” I know of no characteristic symptomatology which serves to definitely establish a diagnosis in all such cases. Each case must indeed be a careful and searching study in itself, weighing each fact, and not infrequently being called upon to weigh many fancies, too.

I am convinced that many cases are impossible of diagnosis without surgical exploration. Recently, radiology has made a strong bid for prominence and fame in clearing up these doubtful cases with obscure digestive symptoms. Added to other carefully worked-out information, it has indeed been a help to me in many cases.

A positive diagnosis of gall-stones can sometimes be made and the outline of the stone seen in the X-ray shadow. Adhesions about the gall-bladder, causing traction on stomach, duodenum and colon, as shown by the bismuth meal, have often settled many a trying diagnostic problem. Let us not let the pendulum swing too far, however, in our enthusiasm for this method of diagnosis. In a fair

50 per cent. of the cases, the radiograph has served me poorly and been the source of an opinion unfortunately not confirmed by a surgical peep inside.

The mechanical effect of migratory stones, producing typical biliary colic, need not be stressed here. All of us are too familiar with the symptomatology and the train of events which may follow. To take up each of these conditions separately would prolong this paper far beyond the allotted time.

Cancer of the gall-bladder is usually primary and nearly always associated with gall-stones, lending much weight to the impression that the presence of gall-stones in a bladder, probably through their traumatic effects, is an important causative factor in the production of the malignancy. On the other hand, cancer of the ducts or in the ampulla of Vater has not been directly connected with gall-stones.

A fatal disease, the diagnosis usually manifests itself in a few months by enlargement of the gall-bladder and jaundice, and secondary involvement of the liver with nodular growths on the surface. Ascites frequently results from extension to the peritoneum or obstruction of the portal circulation by glands at the hilum of the liver.

Jaundice in one past middle age, with impairment of general health and emaciation, usually means cancer of some part of the biliary tract, or cancer of the head of the pancreas. Let us not forget, in this latter condition, the anatomical situation of the head of the pancreas, surrounded by the duodenum, into which the common bile duct empties at a site only too favorable for compression and obstruction by the enlarging growth in the head of the pancreas.

THE GASTRO-INTESTINAL ASPECTS OF GALL-BLADDER DISEASE.*

By SIDNEY K. SIMON, M. D., New Orleans.

In connection with our present latter-day conception of gall-bladder disease, two facts may be considered to stand out with particular prominence:

1. That lesions in the gall-bladder and gall passages are responsible for the occurrence of clinical manifestations of many kinds to a far greater degree than was formerly believed.

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2. That there exists a well-grounded tendency at the present time to assign to the gastro-intestinal tract a more important rôle in the general symptomatology of the condition than previously obtained.

To the gastro-enterologist, in fact, it may be said that the subject of gall-bladder disease has come to assume a place second to none in clinical importance. Certainly, in no other condition originating outside of the gastro-intestinal tract itself does there occur such constant and persistent disturbances of the digestive functions. The term gall-bladder dyspepsia is now commonly employed to cover all the various types of digestive disturbances, and the designation in itself denotes in a striking manner the close physiologic connection that exists between the gall-bladder system as a whole and the digestive apparatus. This connection is maintained and controlled largely by the manner of distribution of the vagus nerve, which throws out branches to the stomach and duodenum as well as to the gall passages, after traversing the diaphragm.

However, apart from the influence of the vagus, the upper digestive tract is liberally supplied by fibres from the sympathetic system, which tends to induce a marked degree of susceptibility to nerve impulses derived from all sections of the abdomen. In this way the stomach, in a particular way, is found to act as a sort of alarm clock for the entire abdomen, rendering signals of distress, very often, in the presence of disease in remote organs.

In order to make somewhat clearer the more or less complex nature of the derangements of the digestive tract that occur in the course of gall-bladder disease, I have deemed it best to divide the subject-matter under three headings, giving consideration in turn to the various clinical manifestations that will be found to result in the stomach in the presence of functional disturbances of, 1, motility; 2, secretion; and 3, sensation.

THE DISTURBANCES OF THE GASTRIC MOTILITY.

The normal state of gastric tonicity is most readily influenced, it would seem, by reflex nerve impulses derived from organic lesions along the gall tracts. Under the effect of such a reflex, especially if persistent, there may occur marked interference in the motile activity of the stomach, either in the form of an inhibition of function, resulting in muscular atony of the stomach as a whole, or equally as often, perhaps, in a hypertonicity of the sphincter mus-

culature. In either event, a retardation of the emptying power of the stomach can be expected to follow. It is interesting to note that both conditions might, in fact, co-exist, as studies with the X-ray in recent years have definitely shown. Thus, one might find at times, under the fluoroscope, evidence of a well-marked spasm at either of the orifices, in conjunction with deficiencies of wave contraction over the rest of the stomach wall. Likewise, spasmodic contractions affecting both the cardia and pylorus may be found to alternate with well-defined states of sphincteric relaxation. These phenomena are invariably associated with clinical manifestations of a more or less characteristic type.

In gall-bladder disease the cardia mechanism would seem to be particularly susceptible to disturbance. As evidence of a cardiospasm the patient will often be found to complain of a constricting or lump-like sensation in the upper epigastrium, extending upward to the throat. To this is added a constant desire to belch, which in a measure affords relief. In the midst of this state of cardia irritability the patient likewise tends to swallow large amounts of air, which further adds to his distress by overdistending the stomach fundus or so-called meganblase. Should the cardiospasm become more pronounced, there will probably follow sharp, knife-like pains under the lower edge of the sternum, radiating towards the precordium and giving rise to nervous disturbances of the heart itself.

An actual interference with deglutition is rarely met with under such purely functional conditions, though in a number of instances formidable and permanent functional stenosis at the cardia has been recorded, solely as the result of gall-bladder affection.

In connection with the pyloric orifice it will be found that mild grades of spasm but rarely result in clinical disturbance. This has been amply demonstrated in the course of the many daily routine examinations of the stomach by means of the X-ray.

However, a more pronounced type of pylorospasm undoubtedly can produce distress, usually in the form of a cramp pain of varying intensity in the epigastrium.

Since pylorospastic pain is a symptom so frequently associated with other abdominal lesions, its presence as a result of gall-bladder disease becomes an added factor to the many difficulties encountered in the differential diagnosis of abdominal diseases in general.

Upon the whole, it will be seen that affections involving the gall tracts can give rise to disturbances of the gastric musculature in many ways.

DISTURBANCES OF GASTRIC SECRETION.

The functional activity of the gastric glands is probably even more responsive to the influence of reflex irritation than is the case with the gastric musculature. In the course of gall-bladder disease, with or without the presence of gall-stones, a hyperacid state of the gastric juice is the usual finding, most commonly in conjunction with a hypersecretion, during the active stage of digestion. The train of symptoms that go to make up the characteristic picture of the hyperacid stomach, such as a gnawing and burning sensation two or three hours after eating, with sour eructations, form not infrequently prominent features of a gall-bladder dyspepsia.

The close analogy of such a picture to that brought about by other intra-abdominal conditions may at times prove to be a source of much confusion in diagnosis, and especially so if more typical evidence of a gall-bladder involvement is otherwise lacking.

On the other hand, it must be remembered that in not a few instances a marked decrease, rather than an increase, of the hydrochloric acid content of the gastric juice might occur in gall-bladder disease. This may, in fact, reach at times a state of total anacidity, resulting in disturbances peculiar to the achylic stomach. Here, again, as likewise with the gastric musculature, the response to reflex irritation is most variable and results in the production of many contradictory and diversified clinical states.

I can recall a few instances in my own experience where an unexplained achylia gastrica, with many annoying clinical manifestations, eventually turned out to have a gall-bladder lesion as its foundation.

DISTURBANCES OF GASTRIC SENSATION.

Such disturbances, from their very nature, are found to be exceptionally varied in all forms of reflex dyspepsia. The ingenuity of the patient, in fact, is often taxed in his attempt to find suitable expressions for the many kinds and degrees of epigastric distress. The basis for the entire range of disturbances in this field can be traced in most instances to a marked increase in the sensibility of the gastric mucosa.

Under normal conditions, the ingestion of food produces a sense of comfort that comes from satisfying the needs of the appetite. However, when the gastric mucosa, through reflex influences, becomes functionally hypersensitive, as it not infrequently does, the presence of food then induces distress of many kinds. Under such

circumstances, the patient will experience sensations of heaviness and fullness, and even pain after eating, out of all proportion to the kind and amount of food taken. Likewise, there may be an undue sensibility to the acid content of the chyme, the patient complaining of a rawness and burning in the stomach region, even though a gastric analysis might show a reduction rather than an increase of the gastric acidity.

In a similar way there occurs in many cases of gall-bladder disease persistent sensations of nausea, which, on the patient's part, cannot usually be ascribed to any particular article of diet. It has been my experience that any nausea of a vague and indefinite type should always occasion suspicion of gall-bladder involvement.

Vomiting, of course, occurs in a variable way in connection with the nausea, but does not in itself present any specially characteristic features. Some observers have called attention to the comparative frequency with which bile appears in the vomitus of gall-bladder cases. The bile regurgitates into the stomach through a relaxed pyloric orifice, but this is not typical of gall-bladder lesions, since it is found to occur similarly under other reflex conditions.

Einhorn has suggested the employment of the duodenal tube for the purpose of obtaining duodenal contents for analysis in the various affections of the gall-bladder and ducts. He claims it is possible to obtain valuable clinical data for diagnosis by means of this method, and has even suggested the advisability of direct therapeutic applications through the tube. However, in connection with the question of therapy of all lesions of the gall system, I think it advisable to keep constantly in mind the important fact that the condition is potentially a surgical one and should always be viewed in this light by the attending physician.

SURGICAL ASPECTS OF GALL-BLADDER DISEASE.*

By J. M. BACHELOR, M. D., F. A. C. S.,

Chief Surgeon of the Surgical Division No. 1, Charity Hospital; Professor of Surgery,
Loyola Post-Graduate School of Medicine,
New Orleans.

It is known that gall-stones are the result of sub-acute inflammatory changes in the mucous membrane of the gall-bladder, induced by invading attenuated bacteria, chiefly the *bacillus coli* and the *bacillus typhosus*; that virulent cultures of these microorganisms injected into the gall-bladder produce an acute cholecystitis with-

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out the formation of gall-stones; that gall-stones are formed in the gall-bladder, but that gall-stones may be, and rarely are, formed in the common bile duct; also that occasionally intra-hepatic stones are formed. These attenuated bacteria most frequently enter the bile from the liver, being carried thither by the portal vein¹.

Sherrington has shown (*Journal of Pathology and Bacteriology*, 1893) that no germs can enter the bile duct from the duodenum so long as the bile is expelled at regular intervals. If, however, from any cause, the outflow of bile is obstructed, there is a rapid invasion of microorganisms. This, undoubtedly, has definite relationship to the greater frequency of gall-stones in women—pregnancy, corset-waist, etc. In 115 adult women with gall-stones Schroeder found $9\frac{9}{10}$ per cent had borne one or more children. Roth gives $11\frac{7}{10}$ per cent in female bodies, $4\frac{7}{10}$ per cent male. Nauyn writes: "On an average, every tenth human being, and of elderly women perhaps every fourth, has gall-stones." Reidel, Brewer and Kehr agree, or give a slightly higher percentage. But, inasmuch as these statistics are founded on post-mortem findings, they should not be accepted as applicable to the average living.

W. J. Mayo believes that one-half of one per cent would be nearer the truth, basing his opinion on findings in examinations made on living subjects during operation for divers abdominal conditions. The greater part, and the more valuable of the present-day pathologic knowledge of the gall-bladder, biliary tract and relating pancreatic disease, has been derived from laboratory studies of specimens taken at operation from the living, made and considered in conjunction with histories of symptoms of such cases. From these ante-mortem studies explanations of formerly unexplained gastralgias, indigestions, dyspepsias, have been found, and the positive causal relationship of gall-stones to malignancies of the gall-bladder, liver and pancreas established. Mayo-Robson found 5 per cent of malignancies in operations where gall-stones were present. W. J. Mayo records 2.25 per cent malignant complications in all operations on gall-bladder and biliary tract. Schroeder states that 14 per cent of all cases of gall-stones at some time have cancer of the biliary passages.

While we may assume that the different and merging pathological conditions and lesions of the gall-bladder are fully recognized and finally classified, and while the immediate and remote consequences of gall-bladder inflammation, with or without stones, are fully

1. Lartigan, New York Academy of Medicine, 1902.

known, yet it must be admitted that diagnosis of gall-stones or of chronic cholecystitis is often a matter of great uncertainty. Almost every surgeon of large experience will confess to having undertaken an operation for gall-stones, or chronic cholecystitis, and to having found neither the one nor the other. By the same token they will recall the oft-times impossibility of diagnosing cholecystitis without stone until the gall-bladder has been opened and the contents and mucous membrane inspected. Frequently a gall-bladder whose interior wall is badly diseased will present on its exterior a perfectly normal appearance, and not infrequently a diagnosis of chronic cholecystitis is possible in the laboratory only. The disease may be limited to certain areas not visible to inspection, but sufficient to perpetuate the troublous symptoms. Brewer, in an analysis of 175 cases operated on by himself, records thirty-three mistakes in diagnosis. In three he mistook a definite gall-bladder lesion for some other disease; in five the lesion was found to be renal; in three, of the appendix; in three, inflammatory adhesions; in three, gummata of the liver; in three, cirrhosis of the liver; and in three no lesion at all. These are some of the mistakes made by every surgeon of large experience.

Gall-bladder surgery is not only often exceedingly difficult, especially in neglected cases, but often disappointing in results. This is especially true of those cases of chronic cholecystitis without gall-stones. Stanton, in considering the end results of 350 operations for gall-stones and cholecystitis, found more than 90 per cent. satisfactory results, or cures, in patients where gall-stones were found, but in only 50 per cent. were the results satisfactory where cholecystitis existed without gall-stone. Deaver reports 4.7 per cent. recurrences in 1,825 operations on the bile passages, and states that stone or stones in the gall-bladder was the most common cause. Kehr, as well as Deaver, thinks actual recurrences of stones rare, and holds that stones found at secondary operation were stones overlooked at previous operations, either in the gall-bladder or in the branches of the hepatic duct. My own experience in 150 operations on the gall-bladder and biliary tract is in strict accord with the findings of Stanton. It is naturally suggested that these unsatisfactory results are dependent either upon faulty diagnosis, in which gall-bladders were drained, that were not the cause of the symptoms for which operation was undertaken, or due to our present inability to say at all times what gall-bladder should be drained and which excised.

In my own cases I have had five deaths directly resulting from operation. There were four cases of gangrene and rupture of the gall-bladder, with one death. One, complicated with malignancy of the pancreas, with an enormously distended gall-bladder, with jaundice and no stone, exemplifying Courvoisier's law. In this case I did a cholecysto-duodenostomy, with an immediate clearing of jaundice and restoration of the patient, who enjoyed comfort and attended business during three months, and survived ten months. In four cases my results were disappointing. These were undoubted cases of chronic cholecystitis, in which the gall-bladder was drained to the surface, and in which I was obliged to confess to the patient, later, that a second operation for the removal of the gall-bladder was necessary.

The question of recurrence of symptoms inevitably presents to every surgeon of large experience: "Are recurrences due to faulty technic in disposing of the gall-bladder? Should he have done cholecystectomy instead of drainage? What rule should he formulate for future guidance?" Except in the presence of the following contraindications, cholecystectomy should be the operation of choice: (*a*) Jaundice, with acute sepsis, involving the hepatic ducts; (*b*) malignancy of the pancreas; (*c*) stricture of the common duct or at the ampulla of Vater; (*d*) the presence of muddy, sand-laden material in the hepatic ducts, suggesting hepatic cholelithiasis; (*e*) acute empyema of gall-bladder; (*f*) the presence of hepatic cirrhosis with jaundice.

There are objections to needless sacrifice of gall-bladder—the chief objection based upon the near relationship of gall-bladder disease and disease of the pancreas. It is now supposed, as suggested by the late John B. Murphy, the function of the gall-bladder to be to relieve pressure in the choledochus and back pressure on the liver; also to secrete mucus, which, when mixed with bile, renders it incapable of exciting harmful pancreatic inflammation, when from any cause it should be forced into the pancreas through the duct of Wirsung. Flexner has shown that pure bile injected into the pancreatic duct gives rise to acute and fatal pancreatitis, but, when mixed with mucus, it is no longer a serious irritant. Halsted confirms these observations. It may be said that it is rare that conditions favorable to forcible entry of bile into the pancreatic duct exist, and this objection to gall-bladder excision is not so positive as may appear on first consideration. Numerous operators have found, in opening the abdomen in cases that at some previous time

have had the gall-bladder excised, a dilatation of the common duct and of the stump of the cystic duct. This seems to be compensatory, and may be sufficient to overcome dangerous pressure in the ampulla of Vater. Van Hengel, regarding eventual formation of new gall-bladder, experimented on rabbits and dogs. He found, whenever a part of the cystic duct was left *in situ*, a new gall-bladder was formed, the size of which was dependent on length of duct left. He never found the least widening of the ampulla of Vater, or any ill-effect on general health. He thinks the secreted bile is constantly discharged into the intestine as well as gall-bladder during fasting.

F. Rost (Mitteilunger aus den Grenzgebeiten der Med. und Chir., Jena, "Functional Importance Gall-Bladder"), in experiments undertaken to determine to what extent the gall-bladder is necessary to the organism, and what effects follow its removal, finds that absence of the gall-bladder does not affect the metabolism directly, but that conditions regarding the passage of bile into the intestine vary according as the muscle at the papilla acts like a sphincter or not. When there is a long stretch of muscle at the papilla, able to hold back the bile, it accumulates above and dilates the ducts, making it a receptacle lake or gall-bladder. He concludes it wiser to leave a portion of the cystic duct.

Fortunately, that pathologic type of gall-bladder numerically most frequent is also that type most often responsible for failure to cure when drainage is practiced. This type of gall-bladder has been called the "strawberry gall-bladder" by MacCarty in his classification, and is easily recognizable. Such a gall-bladder, when opened for inspection, will present numerous yellow dots throughout the mucous membrane, giving rise to its name. These yellow dots are the denuded apices of the villi which have become bile-stained. The rule may be laid down that all such gall-bladders, which merely represent the second stage of chronic cholecystitis, should be excised, unless the indications for drainage, due to other existing conditions, are positive. Frequently, even in the presence of indications for drainage, the gall-bladder may be excised and drainage established to the surface, either by utilizing the stump of the cystic duct or by intubating the choledochus direct, after the T-tube method of Deaver and Kehr.

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SYMPOSIUM ON GALL-BLADDER DISEASES.**DISCUSSION.**

Dr. E. W. Mahler: I am sorry I was unable to be present to hear Dr. Eshleman's paper, and I therefore cannot intelligently discuss it, but it seems to me the principal question in gall-bladder diseases is diagnosis. One reason why the diagnosis is difficult is because the physiology of the organ from which the contents of the gall-bladder come is not thoroughly understood. I believe that, once a diagnosis is made, most conditions are surgical. I will not go into detail, but will remind you there are many possibilities to produce abnormal symptoms referable to this region. In conclusion, will say that the cause of many failures in treatment is due to what might be termed "localized diagnosis," the physician failing to examine and take account of the functions and abnormalities of other organs.

Dr. William Kohlmann: I have two points I desire to speak of. First, that mucus is always admixed with the bile in cholecystitis; second, cholecystitis does not always occur because of obstruction of the common bile duct. Frequently the etiology is to be found in the wall of the gall-bladder.

Dr. Allan Eustis: Disease of the gall-bladder is often marked by symptoms of mucous colitis, and I recall several cases of this latter condition which were due to adhesions at the hepatic flexure from a chronic gall-bladder. These adhesions cause cecal stasis, with resulting mucous colitis. I would like also to point out a possible danger of cholecystectomy, as evidenced in a recent case at Touro. After, apparently, a normal recovery from cholecystectomy, the patient was seized with sudden epigastric pain, vomiting, and symptoms of collapse. The drainage wound ruptured and discharged duodenal contents for two days. The only explanation of this accident is that traumatism had resulted in a duodenal slough. Fortunately, the fistula closed spontaneously without any peritonitis.

I cannot too strongly urge the surgeons to pay more attention to the post-operative diet in gall-bladder cases. There is always more or less secondary cholangitis, and the liver should be spared as much as possible. For this purpose a cereal-fruit diet is far preferable to the usual milk and egg diet prescribed for these cases by the average surgeon, without any attention being given to the intestinal toxemia.

Dr. J. A. Storck: In intestinal colic (biliary stasis), I believe that drugs have a place in some of these cases, and perhaps they might not all be surgical. Vaughan's experimental work on dogs, by implanting stone in gall-bladder, and later finding that same had been dissolved, has an interesting bearing on the subject.

Dr. H. B. Gessner: The technic of the operation has particularly interested me. Moschkowitz rates the transverse incision for exposure of the gall-bladder as probably the best. It is much easier to close than the longitudinal cut; it gives a better exposure; there is less tendency to hernia. On the other hand, it does take more time to make this incision, and there is more hemorrhage. The bleeding can be controlled by two rows of catgut sutures, between which the transverse incision is made, the sutures serving to prevent retraction of the muscular fibres.

Dr. A. C. King: I have found intermittent jaundice, with chill and fever, in some of these cases of common duct stasis, simulating malaria.

Often such symptoms mislead one in a diagnosis. If recognized and operated, the "malaria" disappears.

Dr. Eshleman (in closing): I do not think the etiology of acute catarrhal jaundice has ever been definitely established. Intermittent hepatic fever is often mistaken for malaria, and this fact must be borne in mind.

Dr. Batchelor (in closing): As to technic—cholecystectomy vs. cholecystotomy—true, a free expression is essential. I am guided by the corpulency of the patient. I use Judd's incision. Packing and retraction materially aid the operator in getting at gall-bladder. Complications, due to adhesions, hematemesis, etc., are sometimes present. I prevent adhesions by placing rubber tissue between raw surfaces.

ORLEANS PARISH MEDICAL SOCIETY PROCEEDINGS

MEETING HELD FEBRUARY 25, 1918.

SYMPOSIUM ON THE CONTROL OF CRIMINAL ABORTION.*

DISCUSSION.

Dr. P. B. Salatich: I think that some of the faults in regard to criminal abortion are due in a good many ways to the husband. I have seen cases where husbands have given checks to their wives for the purposes of having abortion performed. I think that the poor people should be cared for. Some of the well-known professional men are giving their services at a reduced price in taking care of pregnant mothers.

In Central America there is a law requiring registration of all children born, either legitimate or illegitimate. Now, in regard to diseases being the cause for the induction of abortion, I am inclined to believe that too often these means are used to allow the patient to have some interruption of the pregnancy to occur. I think that the attitude of the physician should be one of firmness in handling these cases. Do not offer any assistance, but tell the applicant that you will report her if she allows any instrumentation performed upon her.

Dr. E. E. Bernadas: I would like to ask Judge Coco if the statistics from which he quoted were taken from similar number of individuals in each vocation in the city or rural districts.

Dr. S. T. Mayo. I think that the young woman who gives birth to an illegitimate child should be looked after and pitied. She is confronted with a very severe ordeal, and some form of protection should be given her. In some States they try to remedy this and protect the girls by compelling the father to legally become the father of the child. She has always two alternatives, namely: going to some place and giving birth to the child secretly and turning over the child to some asylum for the purpose of raising, or, after the child is born, return home and face

*The Papers and Reports read at this Symposium were published in the April issue of the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

the world with it. By this you can readily see the hardships these classes of cases have to endure, and I believe that a great deal of abortions occur more or less in these classes of individuals.

Dr. J. W. Newman: I think that this is a very vital and important question, and I wish to congratulate the committee on the thoroughness of its investigation and recommendations in their report. However, I think that the new law which they propose falls short of the requirements. The question of drugs is too prominent in this act. The pregnant mothers refuse to have their babies because of economic conditions. I think that some form of maternal insurance should be put in the law. It is proven that a great deal of this criminal abortion is performed by ignorant midwives, a subject which was not touched in the report of our committee. I think that the midwife should be properly educated, and, after securing her license, should have a supervision of her work.

Dr. E. L. King: I wish to second Dr. Newman's talk in regard to the midwife. My experience has been that 90 per cent. of all abortions were produced by the midwife. In our service at the Charity Hospital, nearly all cases are due to the acts of midwives. I think that the armamentarium of the midwife should be looked into and properly regulated. They should have the use only of stipulated instruments, and should be checked up from time to time by our profession.

Dr. Joseph Hoit: I would like to ask by what means did the committee gather the statistics in regard to five million abortions per year in the United States? Do not such statements seriously affect the scientific value of statistics by a trick in argument of an emotional kind—effective on the lecture platform, but empty words to the trained physician?

Dr. J. M. Elliot: The evil comes from the ignorant and immoral midwife. The law should be so stringent as to cover the midwife. We have a lot of poor midwives, colored, etc., with no education and few morals, who would possibly do anything.

Dr. E. L. Leckert: I believe that the root of the trouble lies a great deal with the medical profession. I believe that doctors should be more than careful in endorsing applications of midwives to the Medical Board of Examiners. This would cut out the possible admission of undesirables in this kind of practice.

Dr. E. W. Mahler: I believe that, with slight changes in the present medical laws, we have sufficient laws to regulate and govern the practice of medicine and midwifery. The great trouble I have had has been the lack of interest of the supposed leaders of medical thought and the failure of district attorneys to prosecute where the evidence has been presented to them. I have sent several cases to district attorneys, without receiving a reply to my letters. Most violators of the law are known to the authorities, but are not molested by them. I think that the proper coöperation is lacking somewhere. I believe it is a very vital and important question for the medical profession and public to decide as to when illegal practice will be prosecuted and abolished. The time to get after these people is when they first locate, not later, when they have built up a large and influential clientele. It is simply a question of what the profession and public want. I believe it is necessary at present to have midwives, there being a great many people who can pay the fee of a midwife and cannot pay the fee of a licensed physician. I believe that the regulation of the practice of both physicians and midwives can be accomplished through the present law, with slight changes, if the profession and public want it.

Dr. W. D. Phillips: I think that this is one of the most important subjects discussed by the Society. The largest number of abortions are performed by midwives. I therefore think that the education of the people and midwife along these lines would be the best means of relieving the situation.

Dr. F. A. Larue: You may twist and discuss this subject at length and it remains, after all, but a question of morality, without which you cannot either convict, nor, worse of all, prevent this cursed practice. This was brought the more forcibly to my mind when serving as a member of the State Board of Medical Examiners. I have heard doctors cast such accusations on fellow-practitioners, which I never believed, for I cannot conceive that any physician in our midst would be guilty of such an act. How many unfortunate girls, not the most to blame and friendless in the true sense of the word, are forced to submit to such an operation, when they could, as at times happens, be protected and attended to until delivery, and ultimately led in the proper path?

Dr. J. S. Hebert: I think that a great deal of benefit could be derived if some recognized school of midwifery could graduate a sufficient number of these women for them to form an organization. In other words, let them form such bodies as are formed by nurses and doctors, and then possibly they can operate not only for their own interests and advancement, but, maybe, with some assistance from doctors. Let the organized body reach the immoral midwife. Unless this is done they will probably continue as usual.

Dr. W. H. Knolle. I differ a great deal with some of the discussions which have been brought out to-night. The remedy, in my opinion, is easy: First, get a law which can be enforced; second, have the body of organized medicine lend its assistance in prosecuting these illegal acts by reporting all cases coming under their observation to the district attorney, force the issue, which would, in my opinion, stop them completely. I think that this would gradually reduce the evil. In comparing the reduction of crimes here in the city along with the closing of saloons, we have an example of what has been accomplished. I think that this has got to be solved by the doctors—the making of the law and then its enforcement.

COMMUNICATION

UNITED STATES PUBLIC HEALTH SERVICE,

WASHINGTON, April 5, 1918.

The Editors, NEW ORLEANS MEDICAL AND SURGICAL JOURNAL:

In view of the reports in current medical literature of untoward results from the use of arsphenamine and neo-arsphenamine, I have to request that you give publicity to the statement that it is requested that samples of any lots of these arsenicals which have shown undue toxicity be forwarded to the Hygienic Laboratory for examination.

In sending these samples it should be ascertained that the lot

number is the same as that of the ampoules used on patients. The samples sent should, if possible, be accompanied by a brief note stating the approximate body weight and age of the patient, the dose and dilution of the drug given, the symptoms and result—that is, whether fatal or not.

Respectfully,

(Signed) S. W. McCox, *Director*.

CURRENT LITERATURE

SOME ASPECTS OF RENAL SURGERY.—(J. Bentley Squire, *Surgery, Gynecology and Obstetrics*, Vol. XXIV, No. 6, p. 641.)—Continuously evident is the frequency with which the urologic surgeon is confronted with questions requiring an intimate knowledge of general surgical diagnostic differentiation, thus emphasizing the necessity that the urologic surgeon have a broad general training, that he may intelligently carry on his special work.

Rosenow's work on the selective affinity of bacteria and the rather conclusive demonstration that gall-stones are probably the result oftener of a hematogenous infection than infection by way of the common duct or through the portal system, is noteworthy.

Other examples of the interrelation of renal affections with abdominal conditions may be found in the close clinical association of typhlitis, mobile cecum, chronic appendicitis and constipation with pyelitis and pyeloureteritis.

Again, it is not uncommon for perinephritic abscess to simulate acute appendicitis with abscess.

Recounting the point brought out by Francke, of the close interrelationship of the lymphatic anatomy of the cecum and the right kidney, and also that, biologically, the cecum is the second great place of normal intestinal stasis, where the food naturally remains in the cecum for a variable period; where the alkaline contents of the ileum become acid; where the fluidity of the intestinal contents is greatest, and where, of all places in the gastro-intestinal tract, the bacterial flora is at the maximum, we readily appreciate that here are the etiologic factors in the visceroptotic, stasis cases for the initiation of a typhlitis or chronic appendicitis, with pericolonc infection and resulting lymphatic infection of the right kidney. Thus it is easily explained the relationship between right-sided pyelitis and conditions of chronic intestinal stasis, and particu-

larly such cases occurring in nephroptotic women. In like manner, sigmoidal diverticulitis may be a causal factor in infections involving the left kidney.

The relation of right drop kidney to hydronephrosis and right-sided pyelo-ureteritis and pyelitis, the relation of a right-sided nephroptosis to jaundice have not been sufficiently studied, nor is the clinical picture sufficiently clarified for diagnostic purposes. It will readily be seen that a drop kidney will produce the mechanical factor of stasis predisposing to infection. The anatomic relations of the descending and retroperitoneal portion of the duodenum, overlying the pedicle and the under and lower half of the right kidney, may account for some atypical cases of jaundice, with gastric irritability, found in patients with ptotic kidneys.

A previous paper, entitled "Renal Pain," I have summarized in the following four main pathological conditions, which are apt to be confounded with renal lesions by reason of the symptom of pain. They are: (1) Coincident disease of the gall-bladder and ducts; (2) gastro-duodenal ulcer syndrome; (3) appendicitis, and (4) affections of the large intestine.

The typical pain due to nephrolithiasis is so characteristic as to be readily interpreted. It is, therefore, of interest to read, in Brasch's study of 251 cases of nephrolithiasis, that only in 46 per cent. was the pain referred to the affected kidney, distribution of the pain being noted as follows: The region of the gall-bladder, 12 per cent.; the region of the appendix, 12 per cent.; in 22 per cent. of the cases, it was referred to both sides, and in sixteen cases, or 6 per cent., the pain was referred to the unaffected side.

Of practical importance is the association of renal stone with renal cancer.

Of the total number of kidneys with cancer operated upon at the Mayo Clinic, 64 plus per cent. were associated with stone, and 36 plus per cent. were without stone. In studying the sections of a carcinomatous kidney containing stones, Coryell was able to observe the gradual changes from normal tissues to inflammatory from inflammatory to hyperplastic, and from hyperplastic to neoplastic; and he opines that it seems probable that chronic irritation brought on by the stones was the direct and etiological factor in the production of cancer.

Unilateral renal hematuria does not eliminate the possibility of disease of the other kidney.

Disease may be present in both kidneys and only one of them bleed. Regardless of etiology, we are becoming more and more inclined to be conservative in the treatment; many of our cases have been cured, and remain cured, without any bleeding after a decapsulation.

We have found that the estimation of urea, uric acid and creatinin retention have been of much more decided value as a guide to operability (than P. S. T. test).

Various research workers have shown that, in uremic nephritis, concentration of uric acid and *creatinin* are far in excess of that observed in other conditions. If one considers that the rate of creatinin which is formed in the body of health and disease is practically a constant quantity, and since it is almost readily eliminated by the kidney, it is found in normal conditions only in small amount in the normal blood—one to two milligrams per cubic centimeter—it follows, then, that the estimation of blood creatinin, if it can readily be carried out, is of immense value in the prognosis in this type of case. A case that has presented a creatinin retention of four to fifteen milligrams per 100 cubic centimeters has been a case that has invariably developed marked uremic symptoms.

COHN.

HOOKWORM DISEASE.—An elaborate paper based on the work of the Rockefeller Foundation in the Malay Peninsular, Java and Fiji Archipelago, covering two and one-half years, is published in the *Journal A. M. A.*, February 23, 1918, by S. T. Darling, M. A. Barber and H. P. Hacker, New York. The principal point is the comparative merits of oil of chenopodium and thymol in the treatment of the disease. Their methods of obtaining, counting and classifying the worms, and the relative efficiency of various drugs in expelling them and methods of preparation of the patients and administration of the treatment, are given in considerable detail, and they find that oil of chenopodium is by far the most efficient. What they call the half maximum dose (0.5 c. c. three times, or 1.5 c. c.) of oil of chenopodium is the preferable routine treatment. It does not have the toxic effects of the full dose, and two treatments have the very satisfactory result of removing 99 per cent. of the worms present. It has the additional advantage of more uniform action, and is less unpleasant to the taste than thymol. Thymol has an advantage over this half dose of oil of chenopodium, in that the 90-grain dosage produces a better result when single treatments are

compared. This disappears, however, when two half doses of oil of chenopodium are used, and a dose of 90 grains used indiscriminately would lead to serious results.

HYPOSPADIAS AND ITS TREATMENT.—(Carl Beck, *Surgery, Gynecology and Obstetrics*, Vol. XXIV, p. 515.)—Hypospadias is a mal-development of the urethra. It consists in the partial or total absence of a urethral canal and of the urethral tissues.

Etiology: It is a lack of formation of normal structures or an arrest of development.

Symptoms: The symptoms of hypospadias are of two kinds: (1) physical, and (2) mental. Sometimes they are brought at an early period of life, even in infants. The second period, in which the patients recognize symptoms, is when they begin to go to school, when they notice that, if they would urinate while standing, like their schoolmates, they would soil their clothes. They are accustomed to squat down to urinate, like girls. The third period, in which patients afflicted with hypospadias become anxious about their defect, is when they contemplate marriage. This is indeed the most common occasion to consult the surgeon.

Sterility in married life is one of the reasons of maturer age to the observations of the surgeon. Impossibility of coitus is also one of the complaints. This is an important symptom, on which hinges the result and success of an operative cure. The urethra, being absent or very deficient, the corpora cavernosa do not allow a normal erection, because the glands and scrotum are tightly connected by a membrane or scar-like tissue, and the corpora cavernosa form a curve or painful angle in erection.

The varieties are summed up in three groups, viz: the penile, scrotal, and perineal hypospadias.

The most common variety, next to this, is one in which the *external opening* is at the junction of the penis and the scrotum.

The third and least common variety is the *perineal variety*, in which there is absolutely no urethra present and the bladder opens with a short canal in the perineum.

General consideration before the operation: The general health of the individual must be good and the patient must be worth the effort. He should be in the best of health, free from any other ailment, such as adenoids, tonsil affections, kidney or bladder trouble, etc.; the urine must be normal and free from any pathological contents. To operate upon a bad subject means a failure. The second cause of failure is infection of the wounds, even if an aseptic

operation has been performed. Therefore, to overcome this drawback and danger, it has been recommended that the flow of urine be sidetracked in the usual way of urethrotomy, permanent catheter, etc.

I also thought formerly that the use of the permanent catheter and the perineal section of the urethra were essential, but my later experiences taught me that they are absolutely unnecessary and only complicate matters. All that is necessary is to leave the closure of the urethral orifice for the last step, and use it as the urinary outlet until the whole urethral canal is finished.

Good and exact suturing, as I will show in the detailed description of my technic, permits the urine to pass over wounds, and they will heal nevertheless. There is no more reason why a wound in the urethra should not heal, if there is no leakage of urine between the stitches than that the bowel should not heal, because the contents pass the wound in the latter. No leakage is the secret, but, if there is a leak, a drop of urine, or even ordinary mucus or blood, will prevent union.

This leads to the third cause responsible for failure, namely: inexact suture and inexact thin and shallow adaptations of wound surfaces. Broad wound surfaces closely adapted are the whole secret of primary union. No dead spaces must be left behind. The proper suture material is essential, and here I may say a word in praise of horse-hair in the suture of plastic borders, and particularly wounds of urethra and adjoining tissues.

Another not-to-be-neglected factor in the success is the after-treatment of these cases. They must be under personal supervision of the surgeon himself and must not be left to an assistant or intern, or even a nurse. The operation is often performed in an excellent way by the surgeon, but the after-care is left in incompetent hands. We have found in children and young people it is difficult to retain the dressings in the genital region, and *if cleanliness is observed the patients fare better without any dressings whatsoever.*

When do we regard a case as cured? I now regard a case as cured only when I have satisfied the following two conditions: (1) a perfect, freely movable urethra, permit an erection without angular deflection of the penis during the same; (2) absolute absence of contraction or stricture of the urethra, with a free flow of the stream of urine after a lapse of years.

Many of the cases of mild hypospadias, therefore, ought not to be touched. It is easy to loosen the urethra and bring it out on the

surface of the glands, but at the cost of shortening it and producing a lot of scar tissue, which impedes and makes the act of erection even painful. I have therefore come to the conclusion that it is faulty to insert newly-formed urethra into the glans, because it pulls the glans downward by the insertion. In my last and most successful cases I have placed it below and left abundant tissue around it to allow free stretching of it.

First class of cases: Penile hypospadias, with well-developed penis, normal otherwise, except that the orifice of the urethra is below the glans. There is hardly an indication for operation, unless the mental condition of the patient is such that it is imperative.

The Beck-Rochet method has found great favor with many surgeons. It is not a flap method, but a dislocation or transposition of the urethra. If one considers that he can dissect the urethra for an inch or more and then pull it through a tunnel made in the glans, he has the whole plan of the Beck-Rochet method. While dissecting he can begin with a large collar around the external orifice. This collar will form a funnel when the dissection is finished, and this funnel will increase somewhat the length of the prospective urethra. Thus it will be long enough to fit the length of the penis.

COHN.

INJURY TO PERIPHERAL NERVES.—(Sir Berkeley Moynihan, *Surgery, Gynecology and Obstetrics*, Vol. XXV, No. 6.)—The following summary may be given of our experience up to the present time:

1. The earliest examination should be made of all wounds in which division of a nerve trunk is probable. If at the casualty clearing station such a lesion is found, end-to-end suture should be adopted forthwith. This is more likely to be possible in cases where primary suture of the wound, after excision, is found practicable.

2. If secondary suture of the wounds, after the Carrel-Dakin method has been practiced, is to be undertaken, the union of divided nerves should be secured at the same time.

3. If these methods have been attempted and have failed, they do not prejudice the later union of the nerve. On the contrary, they probably insure that an easier and more satisfactory operation can then be practiced.

4. Throughout the whole period, before late nerve suture is attempted, the strictest attention must be paid to the relaxation and nutrition of all paralyzed muscles, to the maintenance of suppleness

in all joints moved by these muscles and to the preservation of the integrity of the skin.

5. Operations upon nerve trunks demand the most scrupulous observance of the ritual asepsis. There must be the greatest gentleness of manipulation; the nerve must not be injured by instruments or by the surgeon's finger; it must not be separated from its sheath or disturbed overmuch from its bed; it must not be chilled or allowed to dry. All sutures must be of fine catgut and introduced with most punctilious accuracy. Axial rotation of the nerve must be avoided. The cut ends of the nerve, before approximation, must show clearly the fibres of which the trunk consists.

6. Nerve grafting is of little or no value; nerve anastomosis is to be sharply condemned. The turning down of flaps from the nerve to bridge a wide gap is useless.

7. Tendon transplantation is of great value in cases where nerve suture is impossible or where suture has given a result not entirely satisfactory.

COHN.

MENINGOCOCCUS CARRIERS.—R. D. Herrold, Chicago, (*Journal A. M. A.*, January 12, 1918), reports the result of examination of ninety-three segregated men selected without discrimination, and examined soon after isolation with respect to the presence of meningococci in the upper respiratory tract. The results are shown in two tables. The writer's conclusion is that, while the nasopharynx is the most frequent location of meningococci in carriers, the longer they remain carriers the wider their distribution in the upper respiratory tract. The number of positive cultures from other sources than the nasopharynx seems sufficient to warrant the taking of cultures from other parts of the upper respiratory tract.

ACUTE MYELOGENOUS LEUKEMIA.—A case of acute myelogenous leukemia is reported by H. T. Simon and M. S. Rosenthal, New Orleans (*Journal A. M. A.*, December 29, 1917), with post-mortem findings which are rare in the literature. A definite diagnosis was made only at the post-mortem. These cases are rather extensively reported and, considering the rarity of the type, must be of interest. Both microscopic and macroscopic observations were made, and the diagnosis can hardly be questioned. The markedly increased white cell count of 716,000 in fifteen days indicated a leukemia of the most malignant type.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

Edited by DR. L. R. DE BUYS, Secretary-Treasurer.

REPORT OF SECRETARY-TREASURER OF THE LOUISIANA STATE MEDICAL SOCIETY.

*To the Officers and Members of the House of Delegates
of the Louisiana State Medical Society:*

The present status of medical organization throughout the State is as follows: Of the sixty-four parishes, forty-seven have been organized; the remaining seventeen have not been, nor has it been possible to interest the profession in these parishes, even with the campaign for membership and organization of the past four years. Of the forty-seven parishes which have been organized, several have been added to the inactive list, in some cases due to the departure of the officer from the parish owing to his enlistment in the service of the Government and the Parish Society not electing his successor. While forty-seven parishes are organized, twenty-five are strong and active and the remaining ones weak.

In spite of the aforementioned state of organization it is with pride that your Secretary-Treasurer can refer to the membership of the past year, when it reached the goal of 1,000 paid-up members, the goal which he had been earnestly endeavoring to attain before relinquishing his office.

The tendency of the times on the part of the medical profession toward medical organization is to allow things to rock along under the excuse of the stress of the times. This attitude is erroneous, inasmuch as it has been clearly realized that the medical profession was not receiving the consideration it should. This is evidenced by the introduction in the National Senate and House of Representatives, practically simultaneously, of bills providing for the proper rank of the medical profession in the service of the United States. Your Secretary has written the members of both Houses of Congress in order to enlist their support, and is pleased to report that in all but two instances the support requested was promised, and in these two mentioned replies their "earnest consideration was promised when the matter comes up."

FINANCIAL STATEMENT.

In submitting the financial report for the year, and as my term of office is ending, I have had an audit made by Mr. P. J. Stouse,

certified public accountant, at my personal expense, of the affairs of the Society from the time they were entrusted to my care in 1914 up to the present time, which report I wish to make a part of this one.

After working laboriously for a period of four years it may be permissible to quote with pride from the auditor's report:

“Exhibit A: Report for year 1914-15 shows that \$1,262.10 was transferred to you from the previous administration, and after crediting all receipts and charging all expenses there was a balance of \$2,249.25 transferred to the new administration, or an income of 78 per cent. over the previous year.

“Exhibit B: Report for year 1915-16 shows again a substantial increase in revenue, which, after deducting all expenses, left a balance of \$1,958.81 and one Bossier 5 per cent. levee bond, valued at \$1,000, or a total of \$2,958.81—an increase of 31½ per cent. over 1915 and 134½ per cent. over 1914.

“Exhibit C: Report for year 1916-17 has another large increase in membership, the total collected to the date of meeting being \$3,700, and, after all expenses have been charged, shows a credit balance of \$2,461.64 and one Bossier bond, making a total of \$3,461.64—an increase of 17 per cent. over 1916, 53 per cent. over 1915, and 174 per cent. over 1914, which is a most creditable showing for the administration.”

In the foregoing statements the auditor is referring only to the General Fund of the Society. It would be quite proper to include the Medical Defense Fund, making a grand total for each year, which would be as follows, again quoting from the supplemented and final report up to April 15, 1918:

“In making comparative statements in report submitted April 10, I find that I omitted to add to each year's net result the Medical Defense Fund, which is really nothing else but a part of the General Fund set aside for a special purpose, and accordingly the result of the year 1914-15, with the Medical Defense Fund of 1915 added, will show a gain of 110 per cent. over 1914, instead of 78 per cent; the year 1915-16 shows a gain of 197 per cent. and 40 per cent., respectively; the year 1916-17 shows gains of 274 per cent., 78 per cent. and 26 per cent., and this fiscal year, 1917-18, shows a gain of 315½ per cent. over 1914, of 97¾ per cent. over 1915, 40 per cent. over 1916, and 10⅞ per cent over 1917.”

From the foregoing it will be seen that even after the medical organization in the State had reached the highest level in the history of the State Society, which was last year and in spite of the strenuous times incident to our national problems, the financial condition of the Society has made a further gain of 10⅞ per cent. over our former years.

In closing my report and terminating my service as your Secretary-Treasurer it is with pleasure that I can allude to the present status of medical organization in the State, to the present benefits provided and included in the membership in our State Society, and to the present financial standing of the Society. All this has been made possible by the unlimited coöperation you have given me during my entire period of service, and for which I desire to express my sincerest and most profound gratitude.

Respectfully submitted,

(Signed) L. R. DEBUYS, *Secretary-Treasurer.*

NEWS AND COMMENT

THE AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION will meet in Atlantic City May 6 and 7.

THE SOUTHERN GASTRO-ENTEROLOGICAL ASSOCIATION, in conjunction with the Southern Medical Association, will meet in Asheville, N. C., November, 1918.

THE AMERICAN GYNCOLOGICAL SOCIETY will meet in Philadelphia May 16, 17 and 18.

THE AMERICAN DERMATOLOGICAL ASSOCIATION MEETING POSTPONED.—On account of the unusual conditions imposed by the war, making attendance impossible for many members now in active military service, it has been decided by the Council to postpone the annual meeting for the year 1918.

THE AMERICAN UROLOGICAL ASSOCIATION has decided likewise.

EAST FELICIANA MEDICAL SOCIETY MEETS.—The East Feliciana Medical Society met in Clinton, La., March 27. Dr. C. W. Allen, of New Orleans, who was a guest of the meeting, read a paper on "Anesthesia and Radium." Other guests at the meeting were Drs. R. P. Jones and C. S. Weis, of Baton Rouge, and Capt. E. L. Irwin, of the U. S. Army. The following officers were elected for 1918: Dr. C. Pierson, Jackson, La., president; Dr. H. M. Young, vice-president, and Dr. E. M. Toler, Clinton La., secretary-treasurer. Drs. Toler and Singletary were elected delegates to the State convention.

IT IS VERY IMPORTANT that the Government should have the assistance of all citizens in detecting enemy propaganda or suspicious activities of individuals, and you will do a service in notifying the Intelligence Officer, Headquarters Southern Department,

Charleston, S. C. The names of informants will not be divulged and there need be no fear, on the part of anybody, of getting into trouble in case suspicions prove to be unfounded. Informants should indicate the nature and source of their information, as well as the time and place.

THE UNITED STATES CIVIL SERVICE COMMISSION announces an open competitive examination on May 1 for acting assistant surgeon, for women only. Vacancies in the Public Health Service, at salaries ranging from \$1,800 to \$2,500 a year, and in positions requiring similar qualifications, at these or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion. Certification to fill the higher-salaried positions will be made from those attaining the highest average percentages in the examination. In filling vacancies in this position certification will be made of the highest eligibles residing nearest the vicinity of the place at which the appointee is to be employed, except that, upon request of the department, certification will be made of the highest eligibles on the register for the entire country who have expressed willingness to accept appointment where the vacancy exists. Appointees to certain positions will be expected to make physical examinations of female workers and immigrants, conduct sanitary surveys, and perform other duties of routine character. Applicants must have graduated from a medical school of recognized standing, and must show that they have had experience which has rendered them proficient in infant welfare work, school and community hygiene, and analogous problems. They must have reached their twenty-first but not their forty-fifth birthday on the date of the examination. They must submit with their applications their photographs, taken within two years. Tintypes or proofs will not be accepted. The examination is open to all female citizens of the United States who meet the requirements. Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Customhouse, Boston (Mass.), New York (N. Y.), New Orleans (La.), Honolulu (Hawaii); postoffice, Philadelphia (Pa.), Atlanta (Ga.), Cincinnati (Ohio), Chicago (Ill.), St. Paul (Minn.), Seattle (Wash.), San Francisco (Cal.); Old Customhouse, St. Louis (Mo.); Administration Building Balboa Heights, Canal Zone; or to the chairman

of the Porto Rican Civil Service Commission, San Juan, P. R. Applications should be properly executed, excluding the county officer's certificate, and must be filed with the Civil Service Commission, Washington, D. C., prior to the hour of closing business on May 21, 1918. (Issued April 8, 1918.)

INCREASED APPROPRIATION ASKED.—The State Board of Health of Louisiana has submitted a budget to the State Board of Affairs calling for a total appropriation for 1918-19 of \$673,654.96. The sum asked is greatly in excess of previous years, but the authorities insist that the sum is necessary to put the State on a proper sanitary and hygienic basis.

A CALL FOR DOCTORS TO ENLIST.—On April 11, 1918, a call for 7,000 medical men for the army and navy was issued through the Council of National Defense. Surgeon General Gorgas asked for 5,000 doctors with which to establish a reserve for the army as fast as the 16,000 medical officers now in training are ordered to France, and Surgeon General Braisted called for 2,000 medical men to meet the demands for immediate expansion and establish a reserve.

THE CALL PERSISTS FOR NURSES.—Surgeon General Gorgas has called upon the American Red Cross to supply 5,000 nurses to the Army Nurse Corps by June 1. They are needed for service in military hospitals both in this country and abroad. Nurses may volunteer through their nearest local committee on Red Cross Nursing Service, through the Director of the Bureau of Nursing in their division, direct to Red Cross headquarters, Washington, D. C., or to the Surgeon General's office, War Department, Washington, D. C.

EXAMINATIONS OF NATIONAL BOARD.—The National Board of Medical Examiners, beginning April 8, held examinations at Fort Oglethorpe, Ga., and at Fort Riley, Kas.

CONVALESCENT HOME FOR GOVERNMENT SERVICE.—The convalescent home of the Burke Foundation has been offered to the Government for the period of the war, and arrangements are about completed for using this institution as a home for convalescent soldiers and sailors. The home will furnish accommodations for several hundred men.

THE NEUROLOGICAL BULLETIN.—This new monthly journal is being published under the auspices of Columbia University by Paul B. Hoeber in New York City. The editor is Dr. Frederick Tilney, professor of nervous diseases in the Medical Department of Columbia University, and the associate editor is Dr. Louis Casamajor. The numbers which have appeared since the beginning of the year con-

tain much valuable material gathered from the weekly clinical conferences of the Neurological Department of the College of Physicians and Surgeons. Neurologists will welcome this journal, which promises soon to be among the leaders in neurological literature.

INFANT WELFARE STATIONS.—The Child Welfare Board of the General Medical Board of the Council of National Defense, of which Dr. Samuel McC. Hamil is chairman, has begun a movement to provide infant welfare stations in all parts of the country. The committee is to coöperate with State, municipal and county departments of health in order to increase the efficiency of their work. Some of their plans will include calling the attention of communities to the effect of war in reducing the population and the importance of preserving the lives of infants and children; instruction in antenatal care, as well as in the care of infants and children of pre-school age; propaganda urging financial provision to enable a mother to stay at home and give proper care to her children.

AMERICAN POSTURE LEAGUE.—The American Posture League held its annual meeting on March 9 and elected the following officers: Miss Jessie H. Bancroft, president; Capt. Frederick R. Green, vice-president; Dr. Henry Ling Taylor, secretary, and Dr. Percy W. Roberts, treasurer. The reports for the year showed a great activity in relation to war conditions and a large demand on the resources of the league as a national health organization. The Technical Committee of the League reported completed work for the year on factory and school seats, shoes and other articles of clothing for men, women and children, besides a large educational service.

OSTEOPATHS NOT COMMISSIONED IN THE MEDICAL RESERVE CORPS.—Contrary to their expectations of a month ago, osteopaths have been refused commissions in the Medical Reserve Corps of the United States Army, the judge advocate general ruling that the M. D. degree was necessary.

FOOTBALL PLAYERS ARE POOR SOLDIERS.—Because they have been so long tuned to the highest pitch to take part in the game, making their nerves so acute that they cannot stand gunfire as can the ordinary man, professional football players are not wanted in the trenches. The endurance of these players has been found to be less than one-third of that of the ordinary soldier taken from the desk, farm or the shop.

ARREST FOR SMUGGLING NEOSALVARSAN.—A Dutch diplomat, claiming that the drug was for the use of the Australian Red Cross,

was recently arrested and held in \$2,500 bail for having smuggled \$40,000 worth of neosalvarsan into this country.

TUBERCULOSIS DECREASES.—In a preliminary announcement from the United States Bureau of Census relating to mortality statistics for 1916, it is stated that, because of progress in the prevention and treatment of tuberculosis of all forms, the decline in the tuberculosis death rate in recent years has been most pronounced, having fallen from 200.7 per 100,000 in 1904 to 141.6 in 1916, a decrease of nearly 30 per cent.

HIGHER RANK FOR MEDICAL RESERVE CORPS.—A bill is now before Congress to place members of the Medical Reserve Corps, if in active duty, on an equal footing with members in the regular Medical Corps, and also to give medical officers higher rank in the army than lieutenant, captain and major, the only ranks now open to them.

DIGITALIS FOR BASE HOSPITALS.—The College of Pharmacy of the University of Minnesota recently shipped to Washington, D. C., 4,000 pints of tincture of digitalis for use in the base hospitals. This digitalis, which is of a high quality, was grown at the university.

NUMBER IN THE MEDICAL RESERVE CORPS.—On April 5, 1918, the total number in the Medical Reserve Corps was reported to be 18,279. Of these, 1,135 were majors, 4,310 captains, and 12,834 lieutenants. In addition, approximately 4,000 others have been recommended for commissions.

MEDICAL MAYORS.—At a recent election in Indiana, the following cities elected a doctor to the office of mayor: Frankfort, Dr. O. W. Edmonds; Garrett, Dr. T. A. Clevinger; Richmond, Dr. W. W. Zimmerman; South Bend, Dr. F. R. Carson; Wabash, Dr. L. W. Smith; Washington, Dr. S. L. McPherson; Vincennes, Dr. J. W. McDowell.

PERSONALS.—Brigadier General Charles Richard and Major Frank Billings have been appointed to revise the Manual of Instructions for Medical Advisory Boards working under the selective draft law.

Major J. F. Corbett has been sent from the Rockefeller Institute to Canada to study the Canadian treatment of returning soldiers suffering from peripheral nerve injuries.

Major Simon Flexner, with Major George Draper, are conducting an investigation at Fort Sheridan, Ill., in connection with the prevention of spinal meningitis.

Captain W. M. Perkins (New Orleans) is on duty at the Base Hospital at Camp Travis, Fort Sam Houston, Texas.

Major Isadore Dyer (New Orleans), who is a member of the Executive Committee of the National Board of Medical Examiners, attended the examinations of the board held at Fort Oglethorpe, Ga., and Fort Riley, Kas., during April.

Captain C. Jeff Miller (New Orleans), medical aide to Governor Pleasant, attended with him the review of troops during the early part of the month at Camp Beauregard, Alexandria, La.

Lieutenant H. R. Davies, of the Medical Reserve Corps, has received the Distinguished Cross Service and is the first American serving with the British forces upon whom this medal has been conferred. He remained in a dugout under a continuous shell fire attending to occupants after it had been blown in.

REMOVALS.—Dr. A. C. Oliver, from French Camp, Miss., to Keiser, Ark.

Dr. J. H. Landrum, from Eros, to Jonesboro, La.

Dr. W. P. Chamberlain, from Plattsburg Barracks, N. Y., to Surgeon General's office, Washington, D. C.

Dr. E. O. Trahan, from White Castle to Baton Rouge, La.

Dr. Samuel T. Darling, formerly of Ancon Hospital, Panama, is now professor of hygiene of the Faculty of Medicine and Surgery, Sao Paulo, Brazil.

MARRIED.—On Thursday, April 4, 1918, Dr. Davis Frederick Waide to Miss Juanita Robinson, both of this city.

DIED.—On March 9, 1918, Dr. J. A. Gaar, Jonesboro, La.

On February 18, 1918, Dr. F. M. Sandwith, 31 Cavendish Square, London, England, honorary member of the American Society of Tropical Medicine.

On April 7, 1918, at Asheville, N. C., Dr. Silvio von Ruck, noted authority on tuberculosis research, aged forty-two years.

BOOK REVIEWS AND NOTICES

Diseases of Women, by Harry Sturgeon Crossen, M. D., F. A. C. S., C. V. Mosby Company, St. Louis, 1917.

The fourth edition of Dr. Crossen's excellent textbook is now presented to the profession, thoroughly revised and with the addition of numerous drawings and photomicrographs.

The former editions received unqualified praise of the medical press because of the practical arrangement of the subject-matter, the excel-

lent and profuse illustrations and the attention paid to diagnosis and gynecologic pathology.

An entire chapter has been added on the Ductless Gland System, which was prepared by Dr. Hugo Ehrenfest, who also assisted in the revision of the entire work.

The general practitioner can accept the work as one of the best modern texts, because it is especially well arranged for quick reference and gives the personal views of a teacher of wide experience and conservative tendencies.

C. J. MILLER.

The Practical Medicine Series. Vol. IV: **Gynecology**, edited by Drs. Emilius C. Dudley and Sydney Sochet. Vol. VII. **Obstetrics**, edited by Dr. Jos. B. de Lee. The Year Book Publishers, Chicago, 1917.

These convenient volumes, devoted to a review of the year's progress in medicine and surgery, have long since become popular with the profession, because of their excellent arrangement and the high standing of the authors. In addition to the carefully-selected abstracts, the authors add their personal views, which add materially to the value of the contributions.

Volume IV, devoted to gynecology, is edited by Dr. Emilius C. Dudley and Sydney Sochet. The editors call attention to the valuable contributions to the literature of organotherapy, but, after reading the numerous contributions, it would appear that much activity is recorded, but little actual close experience.

There is a noticeable lack of foreign titles listed among the reviews, but a most satisfactory increase of American contributions.

Volume VII is devoted to obstetrics and edited by Dr. Joseph B. DeLee. Probably every phase of the physiology and pathology of pregnancy and labor is covered in a manner to give the busy practitioner a gist of the year's progress in this branch of medicine.

MILLER.

General Principles of Therapeutics, by Francis H. McCrudden, S. B., M. D. Gregory, Boston, 1917.

The members of the medical profession, whether teachers or practitioners, are always ready to welcome a new work by an author of ability. This volume belongs to the group that presents an outline of treatment, and is of particular value to the teacher in arranging a lecture and to the busy physician to refresh his mind in the few odd moments at his disposal. The arrangement is largely original, and there is a store of easily accessible information.

It is to be regretted that in some instances the text seems rather imperfectly balanced. For example, while a treatise on therapeutics, more space is given to the physiology of digestion than to the treatment of tuberculosis, pneumonia, malaria, typhoid, measles and all other acute infectious diseases combined. It is also unfortunate that at times the author recommends proprietaries instead of standard preparations.

The treatment in some instances is curtailed to an unfortunate degree. For example, uncinariasis is dismissed with five lines, while the dosage of thymol and the matter of diet might be revised to advantage. An alphabetical index would add to the value of the work.

As a whole, the author has done well, and the reviewer hopes for many future editions of ever-increasing excellence.

O. W. BETHEA.

The Prescription, by Otto A. Wall, Ph. G., M. D. C. V. Mosby Company, St. Louis, 1917.

The supply of the previous editions had long been exhausted, and the many physicians and pharmacists who had been unable to secure a copy of this valuable work will doubly welcome the new edition.

The writer particularly shows a wonderful mastery of the scientific and historical aspects of his subject and is handing down a wealth of invaluable information hard to locate elsewhere. The volume is of such a standard of excellence that, where minor details seem to be erroneous or subject to improvement, a reviewer would hardly have the heart (or the temerity) to offer a criticism.

O. W. BETHEA.

An Intermediate Textbook of Physiological Chemistry, With Experiments, by C. J. V. Pettibone, Ph. D. C. V. Mosby Company, St. Louis, 1917.

The aim of the author of this book has been to write a text covering the general field of physiological chemistry in such a way that the student will constantly have before him the bio-chemical viewpoint. As an intermediate text, this work should prove most useful, and, as pointed out by Pettibone, if supplemented by lectures, can well be used for the advanced study of physiological chemistry.

The experiments and laboratory detail are well chosen, and carefully and clearly explained. The chapters on the normal urine are modern and show much thought in preparation. A synopsis of pathologic urine is also included, with the customary tests.

At the end of the text are to be found lists of literature and laboratory methods for reference covering the advances in the field of biological chemistry during the past ten years. These references will prove of the utmost value to the students of physiological chemistry.

F. P. CHILLINGWORTH.

Kirke's Handbook of Physiology, revised and rewritten by Charles Wilson Greene, A. M., Ph. D. Ninth American revision. William Wood & Co., New York, 1917.

In Greene's last revision of Kirke's Handbook of Physiology an effort has been made to bring the subject-matter up to date. The first three chapters are devoted to Histology, and the fourth chapter to Physiological Chemistry. Inasmuch as medical students are required to have these two important subjects behind them before they commence their work in the field of physiology, it is evident that Greene has prepared this new edition especially for dental students and as a reference work for college physiology. As a dental physiology, this work should prove most satisfactory.

Many chapters end with laboratory exercises, which perhaps would prove more beneficial if they had been collected and placed at the end of the book.

The recent work of Mendel and Osborne, with the food factors necessary to growth, has been incorporated into the text. As in previous editions, Green again emphasizes the growing importance of clinical physiology.

F. P. CHILLINGWORTH.

The Principles of Mental Hygiene, by William S. White, M. D. With an introduction by Smith Ely Jelliffe, M. D., Ph. D. The MacMillan Company, New York.

Even the special student of mental phases of society has not reached

solid ground. This is largely due, perhaps, to the maze of material in which he has discovered himself and about much of which he must philosophize before he can reach a practical outlet for its solution. Any help, then, should be welcome. Dr. White has contributed much to the illumination of the field, and in the pages of this book there is to be found a careful review of the social tendencies to loss of mental unbalance. Many sidelights are thrown on the general problem of mental disorder and of its care and prevention. It will need a wide education of all kinds of people, however, before results are attained. There is so much between the covers of the book that offers interest and knowledge of the subject that it is difficult to select any particular point for review. The important conclusion may be drawn, though, that the study of institutions for the insane and for criminals and the investigation of the psychological status of the young have, altogether, brought large reform. This may soon create a better and more effective outlook for the feeble-minded and for those now classed as insane. The author himself, in his concluding paragraph, best summarizes the intention of his book:

"To see man as a social animal and his failures as forms of social inadequacy. * * * ; then to attempt to bring to bear upon the problem those forces which are best calculated to bring about results which are constructively of the highest value to both the individual and society, and then to be able to apply the principles worked out in dealing with individual cases to the larger, more general issues—these are the problems of mental hygiene."

DYER.

Technic of the Irrigation Treatment of Wounds by the Carrel Method, by J. Dumas and Anne Carrel. Authorized translation by Adrian V. S. Lambert, M. D. Introduction by W. W. Keen, M. D., LL. D., F. R. C. S. (London). Paul B. Hoeber, New York.

This little book gives the exact detail of the apparatus and the solutions employed, with explanation of the procedure. Precise photographic illustrations and line drawings are offered, all together making a real, instructive outline of the Carrel method. An appendix indicates the necessity and the method for microscopical examination of war wounds to determine the degree of infection. A glossary of French terms used by the authors of the method concludes the book.

DYER.

Progressive Medicine. Edited by Hobart Amory Hare, M. D., and assisted by Leighton P. Appleman, M. D. Vol. XX, No. 3 and No. 4. Lea & Febiger, Philadelphia and New York.

Volume III of this standard review of current medicine and surgery contains material contributed by William Ewart, on the Thorax and Its Viscera; by William S. Gottheil, on Dermatology and Syphilis; by Edward P. Davis, on Obstetrics; and on Diseases of the Nervous System by William G. Spiller. The list of contributors should attest the character of the material. Gottheil's review is fully illustrated and touches on the unusual topics of autoserotherapy, heliotherapy and dyschromias. A good discussion of the paraffin treatment of burns is given, as also a rather full survey of radium in dermatology. His conclusions on the latter topic are worth quoting: "I am perfectly convinced that the general practitioner need not, at this stage of its development, take radium into consideration as a dermatotherapeutic agent, and that even the specialist finds but few cases in which its use is indispensably or even

greatly desirable." The contributions by the others are equally noteworthy and up to the standard of this periodical.

Volume IV has Martin E. Renfuss, Diseases of the Digestive Tract; J. Harold Austin, Diseases of the Kidney; Charles W. Bonney, Genito-Urinary Diseases; Joseph C. Bloodgood, Surgery of the Extremities, etc.; H. R. M. Lándis, Practical Therapeutic References. Space prohibits any extensive commentary on these excellent contributions, but we may call attention to the valuable and comprehensive review of military surgery by Bloodgood. More than 150 pages are devoted to this, and these are marked with a number of well-selected illustrations. The references to the sources of the material in themselves should be of service to those interested in this field. The practical character of the material used in this review is also noteworthy.

DYER.

Elements of Field Hygiene and Sanitation, by Joseph H. Ford, B. S., A. M., M. D., Colonel, M. C., U. S. Army. P. Blakiston's Son & Co., Philadelphia.

The medico-military books have grown so numerous since the present war began that it requires considerable discrimination to select those which are really worth while. This consistent volume is among the best we have seen, and it covers a particularly useful field for the man who is in preparation for or engaged in active service. Without too much technical detail, the largest part of the duties of the sanitary officer is well outlined, including many points of practical advice for use when resourcefulness is necessary. Numerous illustrations add materially to the value of the book, because of their practical application. Personal hygiene, camp diseases, the layout of camps, kitchens, water supplies, are among the topics which are well and clearly presented. The size of the book additionally bids for its use as *vade mecum*.

DYER.

The Diagnostics and Treatment of Tropical Diseases, by E. R. Stitt, A. B., Ph. G., M. D., Rear Admiral, U. S. Navy, etc. Second edition. P. Blakiston's Son & Co., Philadelphia.

There is perhaps no current text on tropical diseases in which so much material is presented in such little space and with so much careful detail. The information is, moreover, comprehensive, presenting, as it does, the viewpoint of each authority on every subject discussed, without undue opinionative departure by the author. The object of a thorough text-book is admirably attained, and at the same time each topic is so well covered that the text will serve as exact reference on most of its contained subjects. The chapter on pellagra may be taken as an example, for here the various theories and investigative opinions are submitted in careful review, without undue importance being given to any, while each is fully presented. As much might be said of malaria, leprosy, yellow fever, or of any of the many diseases so well covered. The same painstaking care is also displayed in the many judicious illustrations, which have been well selected and placed. Altogether a deserving text, which should continue to satisfy a large need and render wide service.

DYER.

The Treatment of Infected Wounds, by A. Carrel and G. DeHelly. Translation by Herbert Child, with Introduction by Sir Anthony A. Boulby. Paul B. Hoeber, New York.

The Dakin-Carrel method of treatment of infected wounds has been the subject of much debate and the object of more discussion. It is as generally praised as it is condemned, and even the presentation of Carrel

himself admits the difficulties which have been overcome in establishing its use. Summing up, it is sure that to-day the Carrel-Dakin method is of great value in properly skilled hands, and it is a matter of routine in the training of American medical officers before they go to service abroad. The little book in review gives careful attention to the inception and the development of the procedure, and as carefully lays down the difficulties to be overcome in its use. Once mastered, the plan should be easy, and the book tells exactly how the application of the plan may be carried out.

DYER.

State Board Examination Questions and Answers of the United States and Canada. Fifth edition. Wm. Wood & Co., New York.

Such compendiums will always have interest for those engaged in State examinations and for those who take them. This would seem to justify the publishers in continuing the compilation of the material and in presenting the short-cut answers to the questions of the various boards. The publishers very properly disclaim any intention of offering the answers in lieu of a thorough preparation, but insist that the questions are submitted to those who are concerned in analyzing this plan of medical practice.

DYER.

Radium Therapy in Cancer at the Memorial Hospital, New York. First Report by Henry H. Janeway, M. D. With Discussion by Benjamin S. Barringer, M. D., and an Introduction upon the **Physics of Radium** by Gioacchino Failla, E. E., A. M. Paul B. Hoeber, New York.

An excellent discussion of the physics of radium prefaces the remedial chapters of this report. This gives a good working knowledge of the action of radium and its uses. Of particular interest is the adapted use of emanations after Duane, of Harvard, who has shown the availability of a moderate amount of radium through collecting its emanative gas, on various media, capable of more extended use than the radium itself. The clinical reports in the book bear on the particular value of radium in cancer and add material evidence to the achievement at other hands since the discovery of this agent.

DYER.

A Manual of Anatomy, by Henry Erdman Radasch, M. Sc., M. D. W. B. Saunders Company, Philadelphia, 1917.

This manual of anatomy constructed by Radasch does not differ materially from the usual quiz compends published by various authors, in that his descriptions of many of the structures he names fall short of the essential things that the student should know. So, naturally, it is not a text-book to be submitted to either a pre-medical or a first-year medical student. The text obtained by a first-year medical student is often the guide that he follows throughout his entire college career, and in many instances throughout life. If this training is started from an incomplete text on a subject as important as gross anatomy, and which has such a direct bearing upon so many of the advanced studies, it seems reasonable to surmise that in all of his other subjects he will, if possible, choose for them similar texts to avoid abundance of reading, remaining content with only enough subject material to enable him to pass a course.

Radasch's manual is far superior to many manuals published on gross anatomy. A large number of the cuts, taken from the Sabotta-McMurrich Atlas, comprise the best feature of his book. The author admits that

many of the illustrations "of the visceral portion are adapted from standard works as Cunningham, Gray, Piersol, Morris and Rauber-Kopsch," and many for other structures are often merely poorly copied without giving credit.

The descriptions, from a student's point of view, are very incomplete. The chapter on the vascular system omits the relations of the arteries, a mental picture of which is the most essential thing for the student to carry. The same applies to the chapters on the nervous system. The course and relations of the lingual nerve are omitted entirely. In each chapter one finds like descriptions.

The information comprised in the book is probably sufficiently incomplete for a nurse, or as a mass of reminders for a doctor preparing himself for a State board examination, but most certainly not adequate for use in a medical school.

The BNA terms, when differing from the names preferred by the author, are in most cases given in parenthesis, but in their Latin form. The use of **ventral** and **dorsal** instead of anterior and posterior, and **cephalad** and **caudad** for anterior and posterior, is to be commended.

W. C. SMITH.

PUBLICATIONS RECEIVED

W. B. SAUNDERS COMPANY, Philadelphia and London, 1918.

The Surgical Clinics of Chicago. February, 1918. Vol. 2, No. 1.

The Medical Clinics of North America. January, 1918. Vol. 1, No. 4.

The American Illustrated Medical Dictionary, by W. A. Newman Dorland, A. M., M. D., F. A. C. S. Ninth edition, revised and enlarged.

P. BLAKISTON'S SONS & CO., Philadelphia, 1918.

Details of Military Medical Administration, by Joseph H. Ford, B. S., A. M., M. D.

J. B. LIPPINCOTT COMPANY, Philadelphia and London, 1918.

International Clinics. By leading members of the medical profession throughout the world. Vol. 1. Twenty-eighth Series, 1918.

PAUL B. HOEBER, New York, 1918.

Studies in the Anatomy and Surgery of the Nose and Ear, by Adam E. Smith, M. D.

WASHINGTON: GOVERNMENT PRINTING OFFICE, Washington, D. C., 1918.

Public Health Reports. Vol. 33, Nos. 10, 11, 12 and 13.

Report of National Woman's Liberty Loan Committee. For the First and Second Liberty Loan Campaigns, 1917.

Venereal Disease Legislation. Reprint No. 450. From the **Public Health Reports**.

Malaria in Florida. Reprint No. 446. From the **Public Health Reports**.

Morbidity Statistics of War Industries Needed, by B. S. Warren and Edgar Sydensticker.

Report of the Health Department of the Panama Canal, 1917.

MISCELLANEOUS.

Transactions of the American Pediatric Society. Twenty-ninth Session. Edited by Oscar M. Schloss, M. D. Vol. XXIX.

Transactions of the American Surgical Association. Vol. XXXV. Edited by John F. Binnie, M. D. (Wm. J. Dornan, publisher, Philadelphia.)

Annual Report of the Library Committee of the College of Physicians and Surgeons. 1917.

Thirtieth Annual Report of the Purdue University Agricultural Experiment Station, Lafayette, Ind. 1917.

A Guide to the Organic Drugs of the United States Pharmacopœia and the National Formulary. (Eli Lilly & Co., Indianapolis, Ind.)

REPRINTS.

Sutureless Skin-Sliding Method for the Radical Treatment of Lung Abscess and Chronic Osteomyelitis, by Emil G. Beck, M. D., F. A. C. S.

The Influence of Pregnancy on the Development, Progress and Recurrence of Cancer, by Wm. Seaman Bainbridge.

The Responsibility of State Medical Boards in the Present War Emergency, by C. E. Sawyer, M. D.

Some Essentials of Sickness Statistics, by Edwin W. Kopf.

Chilomastix Mesneli (Wenyon, 1910), by Albert J. Chalmers, M. D., F. R. C. S., D. P. H., and Waino Pekkola.

Rare or Interesting Plants in Michigan, by O. A. Farwell.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for March, 1918.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	1	1	2
Intermittent Fever (Malarial Cachexia)	1	—	1
Smallpox	—	—	—
Measles	1	—	1
Scarlet Fever	—	—	—
Whooping Cough	3	1	4
Diphtheria and Croup	—	—	—
Influenza	9	6	15
Cholera Nostras	—	—	—
Pyemia and Septicemia	1	—	1
Tuberculosis	69	49	118
Cancer	26	7	33
Rheumatism and Gout	1	—	1
Diabetes	6	—	6
Alcoholism	—	—	—
Encephalitis and Meningitis	2	3	5
Locomotor Ataxia	1	—	1
Congestion, Hemorrhage and Softening of Brain	15	8	23
Paralysis	3	—	3
Convulsions of Infancy	—	—	—
Other Diseases of Infancy	13	10	23
Tetanus	2	4	6
Other Nervous Diseases	5	—	5
Heart Diseases	59	36	95
Bronchitis	1	2	3
Pneumonia and Broncho-Pneumonia	29	19	48
Other Respiratory Diseases	2	—	2
Ulcer of Stomach	1	—	1
Other Diseases of the Stomach	—	—	—
Diarrhea, Dysentery and Enteritis	8	12	20
Hernia, Intestinal Obstruction	2	—	2
Cirrhosis of Liver	2	4	6
Other Diseases of the Liver	3	1	4
Simple Peritonitis	—	1	1
Appendicitis	2	5	7
Bright's Disease	30	33	63
Other Genito-Urinary Diseases	9	8	17
Puerperal Diseases	5	3	8
Senile Debility	1	—	1
Suicide	6	—	6
Injuries	24	8	32
All Other Causes	33	20	53
TOTAL	376	241	617

Still-born Children—White, 28; colored, 29; total, 57.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1000 per Annum for Month—White, 16.11; colored, 27.81; total, 19.28. Non-residents excluded, 16.68.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure. 30.04 inches
Mean temperature. 69
Total precipitation. 1.69 inches
Prevailing direction of wind, southwest.



NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

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Vol. LXX

JUNE, 1918

No. 12

EDITORIAL

KEEPING THEM FIT.

Among the developments of the assembling of large bodies of men in the camps and cantonments, the revision of the local Medical Board examination has shown varying degrees of care and otherwise. It is now an old story that it was found necessary to create advisory boards in every State, to whom all debatable cases should be referred for a decision, and such boards have been properly constituted with a group or team of qualified men expert in the special branches in which their opinion would or might be heeded.

So many materially affected in the neurological way had evidently

slipped through, however, that surveys of practically all camps have been or are being made to test the mental efficiency of both officers and men, and, where a trained psychiatrist is not permanently attached to a camp or base hospital, such specially qualified experts are sent on temporary duty to cover this field. The findings from such examinations are not yet in shape for general information, but the test is thorough and far-reaching, and, when completed for all the American forces, it will be of great interest. Not only does the neurological survey include the examination for obvious or easily discernible disease, but it contemplates checking psychoneuroses, alcoholism or drug addiction, and mental aptitude or its converse, mental deficiencies. The tests are comprehensive and far-reaching. Accessory information is accumulated from the daily observation of the men for irregularity in their habits, temperament and the like.

With the psychiatrist at work, and the cardio-vascular division joining in with the tuberculosis boards, and with the cöordination of orthopedist and chiropodist, and lastly, but not least, the combination of dieticians and cooks, all together, these aides to efficiency should succeed in making our soldiers fit.

THE AMERICAN MEDICAL ASSOCIATION MEETS.

The meeting of the A. M. A. this year in Chicago, June 10 to 14, should be of particular service, as every phase of the meeting should bear on the medical interest in the war. Many prominent men who have hitherto contributed much to the program will be absent on better service, but their places should be filled by those who must stay at home. The arrangement for clinics on the days preceding the meeting (June 6, 7 and 8), and on June 10 and 11, should make this an inducement for many to attend.

There are many matters for the notice of the profession of medicine in this country which should develop at this meeting, and the meeting of the A. M. A. should afford the time and the occasion to discuss them. Until now the coöperation of the medical profession in the matters of medical service in the war has been entirely too individual. There should be more organization of the profession as a whole, and this should begin, even if late, with the A. M. A.

The State committees related to the Council of National Defense have done some good work, but they do not yet represent the profession of the states; their work, as well as the work of the Council

at Washington, should be coordinated with the American Medical Association as an *organized* medical profession, working together.

The general headquarters of the meeting will be at the Hotel Sherman, where the Registration Bureau and other official bureaus will be found.

SAFE SODA FOUNTAINS.

While the measles epidemic in army camps was on its way, the sanitary officers of the camps made systematic inspection of all the public eating and ice cream and soda places near the reservations. Many were closed or suspended until strict sanitary cleanliness obtained, and continued.

The casual visit to almost any corner ice cream dispensary or drug store soda fountain in most cities will not encourage the belief that sanitary rules prevail. Ordinary rinsing of glasses suffices in most places, and when the crowd is large this becomes more perfunctory, and even careless.

It is interesting to note, though cleanliness is provided in Louisiana, that the common soda fountain glass has not yet been brought under judgment.

The individual drinking cup has come into use more and more, and it seems to satisfy sanitary needs even more than the drinking fountains. Some drug stores use this mode of service, and perhaps a more enlightened public may in time see the reason for demanding the individual service at ice cream and soda dispensing places.

ON THE FIELD OF HONOR.

DR. LEONIDAS B. FAULK, of Monroe, a member of the Medical Reserve Corps, with the American Expeditionary Force in France, is reported to have been wounded on March 24 in the Somme region, while temporarily attached to the First Worcester Regiment and at his post.

He was severely hurt in the leg, and the stretcher-bearers were hit themselves, hence unable to get him away before the retirement. He was reported at first as killed, but it is now hoped that he is a prisoner in the hands of the Germans.

He is the first Louisiana physician killed or captured while in regular service, and we sincerely trust that his wife will soon hear of his being alive and well.

Whatever his fate, his injuries were received on the field of honor, and we are proud of him.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

PRESIDENT'S ADDRESS.*

By CLARENCE PIERSON, M. D., Jackson, La.

Ladies and Gentlemen, Brother-Members of our State Medical Society and Honorable Guests of our Meeting:

I thrice bid you welcome—welcome to be with us at least yearly, to hear the message of our progress and progressive undertakings; welcome to do honor to our distinguished, honored guests who bring messages of the undreamed-of accomplishments of war-doings and preparation; and, finally, welcome to cheer us all in our endeavors and to add intensified stimulation to the unbounded task of medical and surgical opportunities awaiting us. We felicitate ourselves on this yearly occasion over the marvelous age in which we are living and enjoying ourselves, and in which we at least feel that medical scientific man is playing such a conspicuous part.

The usual evening customary address of the President of this State Society has been some medical or scientific topic, or some special achievement in medicine or surgery in its vast ramifications, or on a particular individual's career in one or the other line of accomplishment.

But, my friends, this is a time of war—harsh, cruel, brutal, relentless war, and the sooner we whip the Kaiser and put him in a cage the better off we are going to be. For the time being we must think of doing nothing else. We think war, we eat, we sleep, we dress war! The billions of resources of the United States, our millions of men and women stand ready and in rapid preparation—strong and courageous, undaunted and scrupulously sincere—all directed by one dynamic magnet—*Sans peur et sans reproche*—(WOODROW WILSON). He will conquer the Hun and crush his despotic and tyrannical complex machine! Future ages thereafter will chant our President's praises and perpetually bless his memory for his salvation of *democracy* and preservation of *Christianity* in its unsullied and undisturbed practices by mankind everywhere.

* Read at the 39th Annual Meeting, Louisiana State Medical Society, New Orleans, April 16, 17, 18, 1918.

The Kaiser said: "You Germans have only one will, and that is my will; there is only one law, and that is my law; there is only one master in this country, that is I; and whoever opposes me I shall crush to pieces."

It is the mind of this royal master, the foul mind of the Kaiser, that is the mind of the German people.

It is the ordained destiny of Germany, given to them by Almighty God, that they shall kill the men, dishonor the women and plunder the land everywhere.

No nation, whichsoever it be, can or can hope to conquer this world.

In this tense, anxious moment of the world's history, the war has broken all systems of ideals save America's democratic ideal of liberty and humanity. This is adamant. It will never change and will be transplanted anew for the final guidance and protection of those now comprising the Central warring people.

We, like our Allies, to-day are in the struggle for national life. We all are enlisted in this seething, gory maelstrom for freedom. Side by side, elbow to elbow, shoulder to shoulder, pressing onward, repelling the enemy inch by inch. In hospitals, with pain and suffering, pierced by bullets and torn with bombs, suffering from shell-shock, every member mangled, crushed—we, all Americans, in spirit and realization, are with our own resolute men—with our own self-sacrificing Allies. We are battling for Christianity—the truly Christian soldiers for ages, not unaccustomed to hardships and self-sacrifices; we are battling for civilization, the wand of progress to broken fetters—we are battling for human society; these are in peril. Civilization and mankind call us. "True, humane Christianity," is the battle-cry—not that manufactured, veneered with kultur made in Germany. The triumph of Justice is the only peace.

In a recent address, impelled by true patriotic impulses, Elihu Root, one of our ablest statesmen, said:

"This is not a war for Servia, for Alsace-Lorraine, for Poland, even for Belgium. It is a war between Odin and Christ. The struggle is more than political. It is a struggle for the overthrow or maintenance of all the progress that the civilization of a century has made toward Christianity. Every step by which kindly and enlightened men during the past hundred years have striven to bring the practice of nations into harmony with the principles of the Christian religion must be retraced if Germany wins. It would mean the ascendancy of a brutal and consciousnessless power, of the dark and horrid past—of the wicked and heathen

past, taking the place of that Christianity which we had fondly hoped we were, little by little, approaching in these recent years. There can be no half-way measures. There is no other issue but this. Shall the German principle of evil, dark, cruel, pagan, control this world and oppress us and our children? The hundred millions of Americans are not weaklings. No, it shall not be."

It is slightly short of a prophetic vision, and an impressive coincidence, at least in the world's affairs of religious reminiscence, apparently ordained by an invisible Deity and inspired by the same omnipresent God, that it falls to the proud lot of the British, in battling for religious freedom, to again enter the Palestines and reconquer the Holy Land. A prouder distinction and farther heralded honor at a more opportune time could not have fallen upon a braver and more imperturbable soldiery. The Turks and their cohorts were mercilessly driven out, and Jerusalem was entered by the British in December, 1917.

General Allenby's proclamation of martial law in Jerusalem was read in Arabic, Hebrew, English, French, Italian, Greek and Russian from the steps of the citadel, and stated that every person should pursue his lawful business without fear or interruption. Jerusalem is regarded with affection by the adherents of three of the great religions of mankind, and its soil has been consecrated by the prayers and pilgrimages of multitudes of devout people of these three religions for many centuries. Every sacred building, monument, holy spot, shrine, traditional site, endowment, pious bequest or customary place of prayer of whatever form of the three religions will be maintained and protected.

Some even contrast this quiet and revered entry and its simplicity to the Kaiser's pompous entry into Jerusalem in 1898, when the Kaiser arrayed himself like a Crusader in pantomime—a typical New Orleans home-made Mardi Gras, even utterly devoid of the customary humor of such occasions.

Diverting somewhat from the customary addual address this evening, I feel it not inopportune to attempt to review with you some particularly salient features of the theaters of war as are in consonance with the relief thereto to the medical profession—the part the profession has long since played, the assistance it has and is rendering, and a consideration, with my limited time, of a few phases which we feel are essentially indispensable.

Only a short while ago President Wilson restated the truths of

our conviction when he said that the eyes of the people have been opened. He said, "and they see. The hand of God is laid upon the nations. Our cause is just and holy. For this we entered the war, and for this cause will we battle until the last gun is fired." Another has wisely said that "America to-day stands at the supreme moment of her history. America has been chosen as the keystone in the arch of civilization. Her strong arm and fertile brain, her great wealth and her vast resources, must bear the measured attack of the mightiest, the blackest, the most sinister and most diabolical military machine that ever destroyed the peace of the world and challenged its freedom. America's great hour has struck."

We ask ourselves individually: Is our comprehension complete? What can I do to help, what part am I to play, what share, what mite of sacrifice and service can I contribute to my country and my flag? The tragedy in this big theater must be borne bravely and resolutely—with decision, calm and smiling Spartan-like courage, with unselfish, untainted and non-ambitious aims. This war shall be prosecuted to insure permanent peace and freedom for all the nations of the earth.

THE PHYSICIAN.

From tradition and training, from his innermost soul, the medical man has been for ages the pillar and strength and guidance to combat the ravages of disease, and is the barometer of prognostication to weather the impending onslaught of the pestilence and plague. The doctor's part has been akin and only second to that of the relationship of Almighty God. The doctor was for a long while the lonely sentinel upon the ramparts of time, the one redeeming glory of mankind, the power for good, ministering alike to peasant and prince, to poverty and potentate. He should be the cherub of kindly fellowship, the guiding star for the upbuilding of his fellow-man. Disdaining alike the love of human power, the love of ease, the splendors of wealth, the hollow applause of a fickle multitude, he devotes himself singly to the art of healing his brother-man. What grander field for the exercise of the traits of a greater, humane character than this?

The population of the world at the present time is estimated at 1,721,000,000, and of this number there are people at war to the number of 1,109,000,000, or 63.33 per cent. actually in war or its ramifications.

When war was finally declared by the United States in April, 1917, we had only 877 (490 regulars and 387 reserve) medical officers, which is an equivalent of twenty-eight for each 1,000 soldiers. Really ten medical officers for every 1,000 men were necessary, and, according to the authorization of Congress organizing an army of 1,850,000 men, it would require 18,500 medical officers to care properly for these soldiers. No less an authority than ex-President William Taft himself computes that we will need an American army of five million men.

It has been a gigantic task for the Surgeon General's office to provide this big number of medical men, and there are to-day approximately 16,000 officers in the government medical service. Notwithstanding the actual number voluntarily enrolled, because of inefficiency and physical disqualifications, up to March 1, 1,301 surgeons had to be dropped from this corps. The causes of discharges were as follows: Physical disability, 476; inaptitude for service, 190; joined other branches of the service, 383; domestic difficulties, 30; resignations, 142; needed by communities, hospitals, schools, etc., 35; deaths, 43; dismissals, 2. The ready response of the medical profession in this wise is an indication of the patriotism actuating that body.

An official tabulation of forty-eight States and the District of Columbia, issued on April 1, shows the number of physicians in each State, the number recommended by the Surgeon General for commission in the Medical Reserve Corps, the percentage so recommended, and the relative rank of each State in this list. It is very noticeable that the physicians of the Western States take very high rank, such as Nevada, Arizona, Montana, Oregon, Minnesota and Washington. Pennsylvania is fifth, Maryland sixth, whilst Louisiana ranks twenty-eighth, with a percentage of 13.9 recommended for service.

Of the number furnished by the State of Louisiana, 203 were graduates of the Tulane University, whereas, Tulane University itself, as far as information is able to be obtained, furnished to the Medical Reserve Corps the number of 353 doctors. The Tulane teaching medical faculty furnished forty-five doctors out of its total enrollment of 132, or almost 40 per cent. of its faculty responded without hesitation.

By compilation of figures procured by Dr. Goldwater, of New York, it is found that 24 per cent. of the attending physicians and

surgeons of the United States at large connected with hospitals have received commissions in the Medical Reserve Corps.

On March 1 there were 144,869 physicians in the forty-eight States and District of Columbia. The Surgeon General's report on March 22 gives 18,138 officers in the Medical Corps. Latest reports from this office show that a greater number of officers are being called to active duty than are being admitted to the Reserve Corps. So far, 15 per cent. of doctors of the country have been commissioned.

The total strength of the Medical Corps on April 1 was as follows:

Regular Army Medical Corps.....	827
Medical Reserve Corps (on active duty, 14,911)....	18,138
Medical Corps, National Guard.	1,229
Medical Corps, National Army.	93
Total.....	<hr/> 20,287

Fourteen thousand nine hundred and eleven medical men, members of the Medical Reserve Corps, most of them young and nearly all connected with hospitals in one capacity or another, are now in military training camps, cantonments and with troops in the field to be fitted for military service in the war. These are the men who are to be the leaders in the medical profession of the next generation. Nearly all of them are backed by the first principles of education and training; many of them are under grizzled campaigners of the regular army—men who obey their superiors without question and accept the same obedience from them. Out in the training camps these men are occupying barracks; their insignia of rank is put away; they sweep and clean up the premises about the place, scrub and oil the floors, make beds and do all the menial duties of the orderly or the domestic or the pupil nurse; they practice setting-up exercises, drill in squads, platoons, companies and battalions; practice equestrianism—that is, cavalry movements and riding; they answered reveille at 5:30 o'clock on those cold winter mornings; they made their fires in their own barracks, and until taps at 9:30 p. m. they have never a single minute they can call their own. What is all this to mean to the hospitals of this country and to the public at the great muster outcome and the profession comes home again, forsaking the sword to take up the plow? We shall know that the war has been worth all that it has cost, and this same experience, with like results, will have saturated

every stratum of society, every trade and profession and every living soul of us, and we shall be a century ahead!

It is hardly amiss on this occasion for me to encourage a continuation of this splendid voluntary enlistment of our profession and to urge more of our profession to do likewise. The day may not be very far distant when every medical practitioner up to the age of fifty-five will be required to show his patriotism and serve his country professionally in domestic or military service. We have no slackers!

OUR HOSPITAL HAS RESPONDED.

In this connection I am proud to announce that the East Louisiana Hospital for the Insane has valiantly responded to its country's call and from our enrolled payroll of 185 employees has furnished the army, the navy and areoplane service forty-three of its best, warmest-blooded patriots. Few of this number were taken by draft. Three of the medical staff volunteered early in the Medical Reserve Corps and are doing to-day superb professional work—in the dugouts of France and elsewhere. An ex-vice-president of our Board of Administrators, a patriotic medical practitioner and our town's leading citizen, before war was declared received his summons to the front, and has been doing first-class work ever since. Another of our staff now holds his commission in the Medical Reserve Corps and is prepared for service whenever the command is given to him. From experience and splendid training in hospital service a number of our men are acting as special orderlies and continue their good work in army hospitals.

FINANCIAL COST TO THE UNITED STATES.

The February report of the Treasury Department shows that \$7,100,000,000 was expended in the first ten months of the war, \$4,121,000,000 being loaned to the Allies, and the estimation is now that a little less than 10,000,000,000 has been expended for the first year of the war. Of this total expenditure, one-half has gone to the Allies, mostly with which to furnish supplies and other necessities. Eighty-two per cent. of this colossal sum of money has come through loans made by our people, and only 17 per cent. of it has come from taxation. The information is given that Great Britain only in the third year of the war raised as much as 17 per cent by taxation for war purposes. When the Third Liberty Loan

of \$6,000,000,000 is raised—and there is no question in the world about the success of this undertaking—our national debt will have run up to \$12,000,000,000 in one year. Then it is estimated that the war debt will be only 5 per cent. of our national wealth and that the interest on this debt will be not over 3 per cent of the country's annual income. The following have added to their indebtedness during the war:

Great Britain.	\$23,000,000,000
(That is, one-third of the total wealth of the United Kingdom.)	
France.	\$15,000,000,000
Russia.	8,000,000,000
Italy.	6,000,000,000
Germany.	20,000,000,000
Austria-Hungary.	14,000,000,000

The total expenditure of the Government of the United States during the fiscal years beginning July 1, 1861, and ending July 30, 1865, was \$3,348,360. This contrast is only in keeping with all the other material strides of our people within the past fifty-three years.

PHYSICAL CAUSES FOR REJECTION.

From a careful perusal of a report from the office of the Provost Marshal General, it is observed that the following are the principal causes for rejections in the selective service, in the order of their rejections:

1. Eye.	21.6%
2. Blood vessels.	8.5%
3. Not stated.	7.8%
4. Hernia.	7.4%
5. Ear.	5.9%
6. Heart disease.	5.8%
7. Tuberculosis.	5.3%
8. Nervous disorder (general and local).	3.7%
9. Genito-urinary (venereal).	4.2%
10. Physical undevelopment.	4.0%

ROYAL ARMY MEDICAL CORPS.

Mr. MacPherson, Under-Secretary for War, speaks in highest terms of devotion and efficiency of the Royal Army Medical Corps toward the care and well-being of the men in his army. In the Napoleonic War, the percentage of death from disease was 97, and deaths on the battlefield only 3 per cent. Even as late as the South African War there were 60,000 cases of disease admitted to the

hospitals and over 8,000 deaths. There were four times as many men died from disease in South Africa as was the case in France up to December 1 of last year. While conditions in France were satisfactory, in other theaters of war, such as Salonica, the conditions were not satisfactory. Latterly, conditions in the Salonica Army were reduced in 1917 to two-thirds of what they had been in 1916 and the death rate was proportionately diminished. The success and gallantry of the army medical service has given it a place in the army never heretofore enjoyed.

CARREL AND DAKIN.

From the most procurable data thus far obtained from the fields of war, we ascertain of the 94 per cent. that are not killed outright, 86 per cent. are saved by modern medicine and surgery. One of the greatest contributors to this lessened mortality and untold suffering has been the medico-surgical remedy in the form of a discovery presented to the profession by two eminent scientists and American surgeons, Drs. Carrel and Dakin, the purpose and success of which being to master its morbid contents and seal the surgical wounds.

Much favorable professional comment is passed upon this new surgical procedure, and it is predicted by many that the best results of this discovery are held in further abeyance for more scientific confirmation.

PSYCHOLOGICAL EXTENSION.

Added to this complex labyrinth of work and organization in preparing a sufficiently large and qualified army to win battle and do homage to our American system of government, was the gigantic task of the office of the Surgeon General, Dr. Gorgas, to establish a correct standard for the army. This standard was not to be physical alone; every part of the soldier—private or officer—was to be considered minutely. His proportions, his health and his physical being were primarily weighed. His mental and nervous system were recognized to be the rock-bottom foundation for his making a truly acceptable and accredited soldier.

Heretofore, neuro-psychiatric tests were unheard of in our army recruiting experiences. The experience of other bellicose nations from modern warfare—shell-shock, trench fire, from ennui, from confinement, from aeroplane elevation and mental stress and

strain—made it supremely essential that the Surgeon General of the Army authorize an extension of psychological examination to all enlisted men and all newly-appointed officers. This work in itself required four commissioned officers and twenty enlisted men per division in order to examine 400 men a day. This required twenty-seven majors, fifty-one captains, fifty-four first lieutenants of the Sanitary Corps (National Army), sixty-two sergeants, sixty-two corporals and 620 enlisted men to examine thirty-one divisional training camps and for special staff in the Surgeon General's office.

Schools of psychiatry had to be opened and capably manned at the various leading medical camps. Here, general military and physical instruction was given students, and, in addition, such instruction in military psychology as the organization and administration of psychological examining, the practice of group and individual examining, types of mental incompetents, malingering and its detection, etc., etc.

Col. Shaw, detailed at Camp Lee cantonment, reported that the general opinion at Camp Lee is distinctly favorable, and I am confident that the results obtained by Lieut. Yoakem and his co-workers amply justify the extension of the examinations to include all enlisted and drafted men and newly-appointed officers. One of the generals in command also states that "it may be revolutionary, but the Psychiatric Board's intelligent tests will play a great part in this division. These tests are virtually conclusive; they have proven so in thousands of cases. Those who show a high intelligence rating will be watched closely, will be given every chance for advancement, their daily work will be taken into consideration, and if they desire promotion they will get it. This is the program from top to bottom, officer and private.

It is reported (1) that 2 per cent. of the drafted men as they appeared were seriously defective in mental development, that they were either menaces or nuisances in military organization; (2) that the intelligence ratings of their men supplied to company commanders greatly assist the latter in properly placing and effectively using them; (3) that the examining of officers will assist greatly in selecting for assignment, promotion or retirement.

Dr. Hunt, the capable specialist, in his examination of 1,500 neuro-psychiatric examination of officers in training camps, found eleven cases that presented symptoms of incipient paresis, pre-paresis or early cerebral syphilis. He also recognized a fatigue syndrome simulating early paresis.

Dr. Thos. W. Salmon, of the National Committee for Mental Hygiene, than to whom no one individual can be attributed greater credit for having been so active in this important piece of work at home and abroad, on the firing lines of battle and in the field hospitals, acquiring first-hand information and instruction, says that these examinations at each of the National Army cantonment camps would result in a great decrease in the number of cases to be returned from the expeditionary forces. Already several thousand men had been rejected for mental and nervous diseases, among these being nearly all the psychoses, mental deficiency—even cases of imbecility and a striking number of epileptics.

Arrangements are now being made for the opening of the first military psychiatric hospital in the United States at Fort Porter, Buffalo, N. Y. A special neuro-psychiatric base hospital has been established for expeditionary forces and will leave shortly for the front. In this force there will be 216 thoroughly trained persons, including physicians, nurses, orderlies, etc.

Major (Dr.) Hammond says that in one regiment of men from a distant part of the country (place not given) it became necessary of those examined by himself and twelve able neurologists and psychiatrists of New York to reject 63 per cent. This large number of rejections proved a revelation and established the greater necessity to stop incompetence at their first enlistment.

From these findings it is not very difficult to understand an explanation for the appalling number of "shell shock" among our soldier boys and the men who command "Forward march." Indiscriminate enlistment, low physical requirements and little or no neuro-psychiatric examinations are too well recognized to-day as the causative factor. The sheet-anchor of differentiation between organic and functional diseases is one for the medical army examiner to determine as quickly as possible.

The medical department feels that the shortening of the war by a single day would effect a saving greater than the cost of conducting neuro-psychiatric examination of millions of men, and because those chiefly responsible for this *new work* have wholly convinced themselves that psychiatry has achieved a position which will enable it to substantially help win the war and the necessary period of conflict. War for man occasionally, it seems, is necessary. Bravery has its psychology; so, also, has the coward his psychology in counter-distinction to courage, the twin brother of bravery. This is no

time for peace talk; we are not striving to establish for ourselves the envious distinction of being known the world over as compromisers.

PHYSICIANS INELIGIBLE FOR DUTY.

As a result of the ineligibility of many medical and surgical men whose patriotism has never been questioned, but for first one cause and another were not able to volunteer and remain members of the Medical Reserve Corps, it has been deemed expedient to mobilize the entire medical and surgical resources of the country. An association of Voluntary Medical Corps men has been organized. The medical profession has always been recognized as made up of men patriotic and anxious to serve their country in any way possible. No cause deters them in their desire to render some service. This idea had its origin some while ago in Philadelphia with Dr. W. D. Robinson as its originator, and a Volunteer Medical Service Association was formed, with Dr. W. W. Keene as president. Others at different places have subsequently been organized. I would suggest, therefore, that similar action be taken by similarly situated medical men in this State. The General Medical Board, with the Council of National Defense, is encouraging the movement and giving its support.

HOME GUARD.

The medical men whom I shall designate "Home Guard" may not all of us have been able financially to so heavily subscribe for Liberty Loan Bonds, may not have proven the biggest Red Cross subscribers or may not have in our private bank vaults the greatest number of Thrift Savings Stamps, or may not have made the largest donations to the Y. M. C. A. collections; nevertheless, many of us have done our mite financially, and all of us are ready and anxious now and always to subscribe, to donate and to contribute our time, our talents, our energy and whole being to the cause of humanity, its health, protection and rehabilitation, which at this critical moment may be the means of caring for those whose fathers, sons and daughters are actually now fighting in the trenches or are aiding in the preparation of those who are fighting, or are to fight for the security of our future civilization. My message to you to-night is that the medical profession of Louisiana thoroughly appreciates its potential influence for good and the true, unselfish principles which

should actuate its every individual. I believe I speak the truth when I say to you, therefore, that we stand ready and willing to fulfill any obligation or responsibility which our government or our people desire to entrust to us.

With the absence from home of so many of our medical friends, our duties necessarily grow. It is really going to tax our time and ability to justifiably attend the increased work that will be ours. "Better sanitation and health" will be the watch-word everywhere now, especially in the greatly congested centers where labor is flocking in response to its multiplied demand. There never has been known such a condition of universal industrial progress and development in certain lines, and a corresponding demand for man and woman-power alike. The labor turnover is dreadful; big wages are received everywhere, and consequently much roaming and shifting and hunting new jobs prevails to a large extent. This means poor living quarters, increased congestion, unhealthy water and poor sanitary arrangements, bad hours, many contagious diseases, increased mortality (especially among babies), all producing considerable demoralization and a large unnecessary expenditure of somebody's money. This is a vast field for the Home Guard, for his professional skill, his infinite patience and consummate diplomatic endurance. It is said that, unless the United States Government embarks without delay into this biggest clean-up campaign ever undertaken, we are going to find ourselves face to face with a serious industrial situation. Surgeon General Blue, when recently asked his opinion upon this subject, said that this estimate was conservative.

OWEN BILL.

The medical profession, for its own position and honor and as a protection to the individual soldier, has long considered that some changes were necessary in the law governing the rank of army medical officers. Two bills have recently been introduced in Congress simultaneously—one in the Senate by Senator Owen and one in the House by Representative Dyer—the provisions being:

"Hereafter the commissioned officers of the Medical Corps and of the Medical Reserve Corps of the United States Army on active duty shall be distributed in the several grades in the same ratios heretofore established by law in the Medical Corps of the United States Navy."

This bill provides, first, in the higher grades increased percentage of officers; and, second (and this is important), that an officer in

the Medical Reserve Corps on active duty may achieve the same rank as an officer in the Regular Medical Corps. If the bill becomes a law, including both the Regular Corps and the Medical Reserve Corps, and basing the percentage estimate on 20,000 officers in active service (required for an army of 2,750,000), there may be 100 brigadier generals, 800 colonels, 1,600 lieutenant colonels, 4,700 majors and 12,800 captains and lieutenants. "The Surgeon General shall also have the authority to designate as consulting officers of either corps and retire them as the interest of the service may require." Strange to say, the provisions of these bills have not met the deserved unanimous endorsement the medical profession had hoped. The public generally, and military officers themselves, have already forgotten the sad lessons of 1898 in the Spanish-American War, and the horrors by death and disgrace to our organizations. Miami and Chickamauga have almost been forgotten. The experience of Gen. Brooks' 10,000 troops, affected with typhoid fever and 700 of whom died, is sufficient to remind us of those sad days, when the medical viewpoint was thrust aside and the all-military idea prevailed. What would Panama be without its Gorgas, Cuba without Reed and Carroll?

President Wilson, wise and far-seeing as he is, has endorsed the provisions of these bills, but Secretary Baker, for some unstated reason, withholds his endorsement and no action can be had until his return from Europe. Certainly, the modest request by the medical profession of one-half of one per cent of commissioned officers for the army is as little recognition as can be granted the profession whose skill and willingness is so necessary for the preservation of the health of the army. We hope our appeal to our Senators and Representatives for their support of this measure shall not be in vain.

ELKS' BASE HOSPITAL.

The undivided medical profession of the entire Southland hails with pleasurable pride the announcement that the United States Government has virtually accepted the offer for the establishment at New Orleans by the Brotherhood of Protective Order of Elks of a modern, scientific, war-equipped base hospital for the future care and treatment of wounded soldiers and sailors, to be under the control of the Surgeon General. This far-reaching humane act by the fraternal organization which is made up of the Best People on

Earth is indeed a splendid piece of philanthropy, and its needful location in this great medical center is cordially endorsed by the combined citizenship here and the profession of the city, and the whole State offers its fullest measure of coöperation and predicts for it an unparalleled success. No location comparable to New Orleans for such an institution could be selected. As a nautical point, located in the vortex of the Mississippi Valley's industrial upgrowth, its selection in the South is ideal. The South is nobly responding to its share of duty, and, by its greater use on the part of the Government in its many ways of gigantic war preparation, a large share of the congestion of the Eastern seaboard can be lessened. We already have much, and are producing raw material in unlimited quantities, such as all the cotton that is grown, 50 per cent. of the lumber, 99 per cent. of the sulphur, 50 per cent. of the oil. We raise 1,600,000,000 bushels of grain, and three-fifths of the coast of the United States is in the South.

UNIVERSAL MILITARY TRAINING.

Shall we of the United States Government adopt universal military training? Fully recognizing our amazingly unprepared condition for war when the war was surely upon us just one year ago now, and only comprehending now what it really meant for us to be in that condition of unpreparedness then, or even now, so far as that is concerned, I don't suppose it would be very difficult to get a majority of our people to endorse universal military training. But, considering it more carefully and weighing thoroughly the cold facts and carrying it to its last analysis, what we really want and need to-day is men, money—money and men—brave, intelligent and trained men—to win this war. What we are fighting for, however, is principle—to win the war, it is true, but to win the war from Germany, to crush her military government and to end her military dominating power over the European countries. In times of peace we cannot impose universal military training unless it be made compulsory by the United States Government, and, if this is finally required, we become a military oligarchy, and this great influence becomes thereafter too great, so as to involve us in subsequent wars, which we are desirous of avoiding. America is a country of peace, happiness and home-loving people. We should encourage greater education, high or common school education—incidentally military training—at our public schools, colleges,

academies, municipal police schools, with governmental aid and provision. Everybody ought to have military training—the vigorous military life of discipline, respecting law and order, greater love for home and country, and physical, moral and social development of the individual himself. In this connection, I might add that it was Gen. Leonard Wood, a medical man at first of low rank, who first realized the great importance of military training for our youths and the utter lack of preparedness on our part to enter in war conflict with any belligerent nation. We are all too familiar with the record of this capable and intrepid military leader. If I had a thousand boys every one of them would serve his turn under good, wholesome military discipline.

AN ADMONITION.

There is one admonition I particularly wish to emphasize, and that is for the medical profession to work with the highest order of harmony. Kicks, discord, discontent or petty jealousies are not conducive to good results, and only create imaginary inurements. We all know that doctors naturally are not any too harmonious, and it is proverbial that they are capable of getting up the most unheard-of differences and rivalries among themselves. This is the occasion to rise to the highest level of an opportunity, to labor with full accord and happiest coöperation for the extremest fruition of our aims and desires.

COMPENSATION.

This monstrous war, which we Americans deplore so seriously, will have its compensation to future mankind. The survivors will hereafter insure us the most splendid citizenship—in fact, history recalls that all protracted wars have had this effect upon its individual participants. The law of the survival of the fittest holds with equal sway. Hardships and sacrifices are first essentials for a soldier. Discipline and the acquired faculty of obeying, as well as giving orders, is soon mastered. Here, true character and fortitude show themselves in the life of the soldier. Fancy the man of physical force and human courage that is required to constantly face the deadly battle-lines of a formidable, seasoned adversary. It is notorious that all the faithful followers for four long, strenuous years of Lee and Jackson, of Grant and Sherman, returned to their old or newly-acquired homes fit and qualified to become the best

citizens of any age, and were ready and prepared to build the best country on the face of the earth.

Still, war is not and shall not be the principal business of mankind, as the philosophy taught by Germany. "We believe that our desire for a new international order, under which reason and justice and the common interests of mankind shall prevail, is the desire of an enlightened men everywhere," as said by President Wilson in his splendid speech on February 11, 1918.

Our present America, her hundred million cosmopolitan people, and the powerful traditional teachings of the Anglo-Saxon race, will submit to no such distorted, diabolical philosophy as prated and driven by that odd character and paranoiac exaggerated ego—William Hohenzollern, who is so unnatural and venomous as to hate his own mother, either because she is of English lineage or because she gave him his crippled, disfiguring arm.

CONSERVATION.

The part that the physician and the surgeon should play to-day in the conservation of food is a very great one indeed. To him, and the laboratory man under his guidance, has the sick been accustomed to depend for its proper nourishment and dietary. If the sick require this advice, why is it not all the more urgent that that whole people be the recipient and beneficiary of a perfect, scientific, balanced diet? Mr. Hoover, if no one else, can convince us of the supreme necessity of the science of dietetics. The thought, therefore, occurs to my mind that the profession is vitally concerned in this phase of food conservation, and should exercise its influence more persuasively hereafter, to the degree that every faculty is aimed in the direction of providing ample and suitable food for the sick, and also coöperating with Mr. Hoover's department.

A recent bulletin of the Equitable Life Insurance Company says: "In America the war order to speed up comes to *a people whose vitality is already under abnormal strain.*" Life strain is due to intemperate living—that is, indulgences in physical and mental activity on the part of some, and of ease, luxury and lack of physical activity on the part of others. Think of 15,000 suicides yearly! This enormous figure is an economic as well as social question. Sixty thousand people below the age of forty die every year of the disease of "old age." Do we consider forty years as "old age"?

The Government, which teaches how to save the lives of plants, trees and animals, must now sow the remedy to save the lives of human beings. Why, in this age of gold, of science and of educational facilities, when the demand for efficiency is so insistent, should not the nation undertake to reduce this waste of national vitality? Inasmuch as the safety of the State and the perpetuity of the race depend upon the health and strength of the individual, the time is at hand for the Government to make a strong move ahead in adopting measures to conserve the physical vigor of our people. Life in war-time, with man-power so essentially needed, has a multiplied value. Necessity, if nothing else, therefore, compels the Government to take the needed precaution to correct these evils.

COMPULSORY REPORTING.

Another field of useful work for the Home Guard is a more accurate report of disease to local health officers and to State Boards of Health. I am not altogether sure that some new compulsory statute on this subject would not be of infinite benefit for the control and treatment of disease. It would be only deserved recognition of the masterful way in which Dr. H. F. Smith, B. A., Surgeon, United States Health Service, Director of Health, took charge of and controlled the threatening health situation at Alexandria, embracing all that territory at and contiguous to the cantonment grounds of Camps Beauregard and Stafford. This piece of work was of first order and commends Dr. Smith and his assisting corps very highly for controlling and stamping out dreadful, spreading diseases. Without the firm right arm of the Government properly placed, it is difficult to surmise what would have been the result.

DISABLED TRAINED NURSES.

The exigencies of the war have occasioned a summons for men of all grades and kinds, but pure and unselfish impulses emblazoned in the hearts and souls of the women, from the inculcations of the beautiful lives of Florence Nightingale and Clara Barton, commanded these women by the tens of thousands to rush to the front, where their angelic presence would conserve the greatest good.

While we are making adequate provisions in hospital facilities for the soldiers and sailors, we must not lose sight of our first responsibility and pleasure—what we owe the disabled and fatigued

trained nurse. The prime duty is to provide commensurate quarters and homes for them.

Now that it is so evident that the war is to continue for an extended period, even before the Government can avail itself of the fully-completed Elks' Base Hospital, we should encourage a more active preparation and better instruction of men at New Orleans, which is a maritime medical center enjoying the advantages of several splendid medical schools—such instructions as bandaging, invalid practice nursing, individual cookery, etc., etc.

Dr. Matas, "that prince of good fellows and professional man with few equals in his calling," and his capable assistant corps, are doing yeoman service here, especially instructing a number of visiting surgeons in their specialty for future work.

CHILD WELFARE.

Every activity to-day is being enlisted to appreciate more than ever before the actual worth of life and the necessity of conserving the health of infants and the prolongation of their lives. A great impetus has been given by all classes alike to conserve the child-life of the nation, heretofore never understood or appreciated as to-day. Movements everywhere throughout the nation are active in this gigantic and far-reaching undertaking. With the entrance of the United States in the war, the field of the Children's Bureau of the Department of Labor, under the leadership of that peerless good woman and sociological worker, Miss Julia C. Lathrop, has become very active and is expanding its territory. The Council of National Defense has been aroused to the vastness of this subject, and through its general Medical Board is vigorously at work. Dr. Frank Martin, chairman of this latter board, is preaching this propaganda throughout the nation. Dr. Anna Howard Shaw, of the Children's Bureau, is lending her great energy and magnetic influence to see what she can accomplish in that direction. We here can attest to the splendid message recently delivered to us by Dr. Shaw. The experience of France for many years past in respect to child welfare is noticeable and alarming to a degree never heretofore appreciated as it is to-day. Her true fortitude, chivalry and manhood is equal to the responsibilities thrust upon her, but unfortunately her man-power is too restricted for her own protection. There is a great necessity for a comprehensive coöperation in this direction. We must understand the importance of coöperating with State and municipal de-

partments of health and health officers to increase their efficiency and broaden their work. We must coöperate with the State departments of education, labor industries and such other official agencies which have to do with child welfare. Counties must be encouraged to secure physicians and nurses trained in child welfare and public health work, so that volunteer workers may have competent leadership. Our medical societies are urged to study and stimulate interest in the subject of child welfare. We must by these exertions attain the end in view to save this year one hundred thousand babies. Can we not safely say, from the campaign conducted recently in your city, that New Orleans will save its quota of one thousand? The matter of criminal abortion, through ignorance and otherwise, so popular, and made so by acquiescence and solicitation, is one of our first and greatest considerations. Fewer and higher social and professional type midwives are to be encouraged by an awakened public, and greater legal safeguards should envelop the practicing individuals. The Orleans Parish Medical Society is highly commended for its progressive action in preparing a new bill upon the subject to be presented to the next session of the Legislature.

VENEREAL DISEASE—VICE CRUSADE.

Venereal disease has been combatted ever since the creation of man. Father Adam and Mother Eve may have been spared the inexorable odium of this fearful scandal, and even to their day and time the human family in some phase or another has considered its ravages and destruction and has offered remedies for its control and eradication. When we know and appreciate what havoc it has played toward our social fabric, what desolation is left in its pathway, how much suffering it has entailed and hardships endured, what amount of apparent disgrace has been borne, the number of wrecks deposited daily in our hospitals for treatment and also for permanent habitude, the incomparable sums of money expended yearly to maintain these discordant notes in the human family, all of which is verified beyond controversy, it is certainly meet and opportune for our entire citizenship, and especially for the medical profession, to give endorsement and active support to this movement undertaken by the War Department and Surgeon General's office to combat venereal disease. If by the consolidated action and coöperation, harmoniously operating by the medical profession, the army and navy and civilian officers and an awakened laity, we

can save the young man, including soldier and sailor, all the time and money spent in the preparation and prosecution of the war and the number of lives lost will be ungrudgingly spent and will establish a new social and racial era for us in the United States. Can we, with our much-vaunted organized medicine, hesitate to give our endorsement and encouragement to this ponderous undertaking? Remember that syphilis, the cause of general paralysis, is a disease itself which alone is responsible for the first admission to our insane hospitals of about 15 per cent. Nearly 24 per cent. of the male inhabitants of our insane hospitals from the cities are suffering from some form of syphilitic infection. Half as many deaths are known to occur every year from general paralysis as from typhoid fever. Do we not offer to-night to the War Department and the Surgeon General's office and to the Louisiana State Board of Health our hearty approval of their propaganda and call upon our undivided profession to aid in this program of effectiveness? Our State Board of Health has been alert and sufficiently progressive to inaugurate in this State a campaign of this sort, and it will be a difficult matter, an uphill business, unless it receives the expected coöperation from its fellow-professional brethren. Other States have already inaugurated this big task of work under the vigorous supervision of the members of the Commission on Health and Sanitation of the Council of National Defense, and many splendid efforts are especially being expended in and around the cantonment zones of the government. California has organized a very advanced and intelligent movement in this direction, and with its superb legalized organization throughout the State, and with ample available funds, we shall await with much interest a fair test of her program.

RE-EDUCATION AND REHABILITATION.

One of the big war problems is the rehabilitation of disabled soldiers and sailors. Canada has experienced much difficulty in being prepared to adequately care for her returned disabled soldiers. The task is a stupendous one, in that hospital custodianship is primarily necessary. In addition, the best medical attention and surgical skill are required to relieve the individual and insure that he shall be able to resume his calling duties or can become a useful, productive member of society. The vast experience of the belligerent countries will aid the United States in making required

preparations for her warriors to receive the best medical nursing and rehabilitating care after they have been wounded in the trenches. Couple this guarantee to our soldiers and sailors with the war-risk insurance laws which have especially been enacted for their benefit, and we have an animated stimulus that will greatly aid the war cause.

Occupational therapy is not altogether new to us. Its need, however, at this especial juncture in our industrial crisis, when manpower is so scarce the world over and when every safeguard is placed around the individual human unit, is all the more emphasized. The healing value of employment has long since been used to such scientific value in the handling of the insane or neurotics that its application commends itself to the disabled, to the weary, the foot-sore homeward-bound soldier and sailor.

It is claimed that Germany utilizes 85 to 90 per cent. of her disabled men back of the lines, and that the majority of the remaining 10 to 15 per cent are entirely self-supporting. Occupational therapy is used in Austrian hospitals. Belgium was the first of the Allied nations to provide systematic occupational treatment. Reëducational centers in France are under the direction of the office "Nationale des Mutilés et Reformés de la Guerre." Great Britain has used hospital workshops as the regular part of hospital equipment in England. The report of the Military Hospitals Commission of Canada says:

"Before vocational education was introduced, many of the men dreaded to be discharged and cut off from military pay and allowance, but since the classes have been well established some men who have gained new wage-earning ability from this acquired technical knowledge often welcome their discharge, and boldly step into better positions than they ever occupied before."

Australia has provided courses of reëducation. New Zealanders are trained in English in many places, while still undischarged from the army. A special institution is established near London for training disabled South Africans. India is training her disabled agriculturists to use motor tractors instead of the plow—little changed in type since the time of Virgil. In Russia it is said provision has not been made for reëducation, and a not infrequent sight is a disabled soldier begging in the streets.

The war has taught the value of practical training and shown vocational opportunities and economic adjustments possible for the disabled. It marks a new conception in the scope of occupational

therapy, and its future development is destined to include all classes and types of convalescents, and not only assist in curative treatment, but take cognizance of the industrial world and prepare the handicapped, so far as possible, to become independent economic units.

The Federal Board for Vocational Education says:

“The problem of training introduced to meet the war need for teachers capable of directing occupational treatment must be studied: First, from the point of view of the number of invalided and the probable number of teachers required; second, special problems encountered in dealing with war invalids; third, qualifications of the instructors; fourth, course of training for teachers.”

Thus, returned maimed soldiers and sailors, unlike the similar industrial worker, handicapped as he is, has the Government behind him, and the nation stands prepared to help him.

Canada estimated that 10 per cent. of her men sent to war are returned disqualified for service. Much of the success of this new movement naturally depends upon the aptitude, practicability and individuality of the teacher *per se*. Few teachers are manufactured or produced. A genuine teacher is a born teacher. There is about a born teacher an indefinite something that we cannot discern. A true teacher must approach the sick with an understanding and a sympathy.

In addition to the physical disabilities, the mental and nervous conditions brought on by the strain of trench warfare complicate the situation. In the case of men whose mental and nervous condition appear quite normal, there will be found to be a sluggishness, a lack of concentration and a nervous fatigue which is the logical outcome of the experience of modern warfare. The administration of occupational treatment in the case of shell-shock, war neuroses and psychoses, requires the most expert skill and understanding of the delicate balance and relation of nature functions of central nervous system. The blind, for instance, must be taught to be blind—that is, to be reconciled to the inconvenience of being blind, and not feel its actual disability.

AIR SERVICE.

Inconceivable progress has been made within the past ten years in the equipment and perfection of the aeroplane and its control by the aviator; great developments in aeroplane—in speed, power and construction, and the institution of long-distant flights, high alti-

tudes, night flying, and specialization in different forms of flight—that is, aerial fighting, reconnoissance and photography, bombing, testing and instructing.

With the manifold complications connected with this intricate scientific study, need we not select the best-fitted individuals for this specialty work? The question has arisen in all countries since the aeroplane has become such a necessity and deadly factor in war affairs, Who is to be the judge of the individual aviator and his fitness for the responsible task? Physical requirements prime every other faculty, and it finally devolves upon the doctor to pass upon the qualifications of the aviator, thereby establishing a new medical service. It is recognized now that the aviator doctor must be a specialist in every branch of medicine and that he must give his whole time to the aviators, and, as it were, as said by another, must serve in the capacity of a physical-exercise conductor or prize-flight trainer. Every instinct, impulse, every characteristic, every attribute, mental, moral and physical, must be well weighed before the aviator can ascend. There is already an active effort being made to standardize this service from the medical viewpoint, and to see what requirements have been already made and are but necessary for future successes.

Peace we shall have when we have won it by the sword, not by Eastern world juggled diplomacy. Money and land can never atone for an infamy like the Germans'. The tears of a contrite heart, conscious of its shame, will alone expiate their crime.

Let us proudly remember that to-day the greatest, grandest and noblest armies of the world are fighting for Christianity, for liberty, for civilization, for the home and fireside—not for aggrandizement, not to destroy, but to save and build up; not to conquer, but for conscience; not only for us and our Allies, but for every land and every race. It means that "the governments derive their just power from the consent of the governed." Take from us liberty—our ideals, our history, our literature, our laws, our hearts—that word "Liberty," and we Americans are nothing but automatons. With us, all recognize that "all men are born with equal rights by nature, the mother of us all."

"OVER THERE."

Every moment is an anxious one for the United States these days. We wait breathlessly for the latest news from "over there," and especially are we concerned about Toul and other sectors of

the French front. We medical men, in spirit and actuality, are with our dear boys who are marching proudly as their duty calls them. We doctors stand guard with them; we share with them their hardships and their deprivations, and we administer to their surgical and medical wants. We see them torn to pieces before our own eyes, their nerves shattered and their muscles defaced. We assist them as their need calls us. We share with them good cheer in their dugouts. We dodge together as the bomb explodes above our heads. Some marksman's eye may not have fallen short of its aim. We place the fellow-soldier peacefully at rest and notify his family of his heroic valor and his unimpeachable courage and daring. Such heroes die for liberty; they die for priceless acts; they sleep perpetually and peacefully on the sacred, hallowed spot made eternally green by the love, admiration and affection of responsive generations still unborn. These sentiments, hand in hand, are with our soldiers and with our absent professional brothers composing that faithful, courageous band of warriors at the front under the leadership of that able and painstaking personality, the peerless Gen. Pershing. Let us, therefore, again renew our loftiest sentiments of *Freedom for All!*

The following resolutions were read at the general meeting on the evening of April 18, 1918:

“Resolved, That the State Medical Society of Louisiana renew its fealty to President Woodrow Wilson, Commander-in-Chief of our Armies, expressed at the annual convention of this body in Alexandria, 1917, with the assurance that the organized medical profession of the State stands as a unit behind him in his conduct of the war and of our foreign relations.

“Resolved, That it is the duty of every member of this body to invest any available funds in his possession in War Stamps and Liberty Bonds, remembering that “he gives twice who gives quickly.”

“Resolved, That it is a grave and solemn duty of every member of this body to exercise his utmost influence in the conservation of food, and especially of wheat, to the end that our soldiers and those of our Allies may not be hampered in the vigorous prosecution of the war and in bringing to a successful termination this world-struggle for the rights of all peoples to live in peace and quietude under a government of their own determination.

“Resolved, That this assembly, as a protest against the exhibition of such barbarism, under the guise of war, will forfeit the charter of any component Society which retains on its roster any alien enemy or any member who gives expression to disloyal or seditious sentiments.

“Further resolved, That a copy of these resolutions be at once sent to the secretaries of the component Societies, to the Journal of the American Medical Association, to the Official Journal of this Society and to the daily press of this city.”

THE REMOVAL OF TONSILS AND ADENOIDS UNDER LOCAL ANESTHESIA.*

By S. M. BLACKSHEAR, M. D., New Orleans.

In writing this paper it is my purpose to deal briefly with the salient points of the subject and to avoid tiring the audience with statistics or with quotations from other writers.

It is hardly necessary to dwell upon the advantages of local anesthesia over general anesthesia, but I will mention a few facts which make it more desirable in doing throat work. First, there is less risk from cardiac or respiratory failure, and other serious complications, such as pneumonia and acute nephritis, are practically unknown following the use of local anesthesia, which cannot be said for general anesthesia.

Especially, since adenoidectomy and tonsillectomy do not come under the head of surgery for saving life, it behooves us to make it as safe as possible from all angles. Then, most patients, who are old enough to reason, prefer not to go to sleep for this work, when they can be assured it will not be a painful procedure. It is also more desirable from an economic point of view, since it requires fewer assistants and less gauze for sponging, as bleeding is reduced to a minimum by the small quantity of adrenalin which is used in the injection for anesthesia. Lastly, it allows the surgeon to concentrate his attention on the operation, instead of dividing it between the surgical work and the anesthesia.

The great disadvantage to local anesthesia in this work is its impracticability in children who are too young to reason with, and unfortunately the majority of the patients requiring this surgery are to be found among the children where there is no alternative but to use general anesthesia.

The first step in local anesthesia for throat work is to abolish the throat reflexes, which is very satisfactorily accomplished by first administering a hypodermic of morphia, from an eighth to a quarter of a grain, taking into consideration the age and size of the patient, which brings about relaxation and relieves anxiety. This hypodermic should be given about fifteen minutes before the operation, and it is advisable to give a 150th-grain of atropia with the morphia for its astringent effect on the salivary secretion which, when it accumulates, is liable to cause coughing and swallowing. The reflexes

* Read before the Orleans Parish Medical Society, April 8, 1918. [Received for publication May 6, 1918.—Eds.]

are further abolished by swabbing the field of distribution of the glosso-pharyngeal nerve, which includes the pharynx, fauces and posterior third of the tongue, with a 20 per cent. solution of cocain.

The reflexes being controlled, the anesthesia proper is obtained by injecting about a dram of a one-half of one per cent. solution of novocain, which contains one minim of adrenalin chloride solution one to one thousand, into the bed of the tonsil. In the absence of novocain, Schleich's solution of cocain No. 1, or apothesine, one-half of one per cent., may be used in the same quantity.

The injection is made by inserting the needle, which should be a long spinal needle, between the anterior pillar and the tonsil until it reaches the bed of the tonsil at three points—one at a point midway between the superior and inferior limits of the tonsil, one in the supra-tonsilar fossa, and one near the base of the tongue. The object is to block off the nerve supply of the tonsil in its bed without infiltrating the tonsil itself, as this would interfere with recognizing the lines of cleavage.

The field being anesthetized, the tonsil is pulled out of its bed and kept on tension by two or three tenacula while it is dissected free from the anterior pillar by means of a sharp scalpel. The incision is begun at the lower limit of the tonsil, where it joins the base of the tongue, and is carried upward and over the supra-tonsilar lobe to meet the posterior pillar at the upper extremity of the tonsil. The anterior pillar being free, the tonsil is pulled forward by means of one or two additional tenacula until the junction of the posterior pillar is accessible, when the original incision is prolonged from above downward, freeing the posterior pillar along the whole length of the tonsil. The tonsil being freed from both pillars, it is then removed from its bed by keeping it on traction and severing the little connective tissue fibers which hold it in with a sharp scalpel, hugging the tonsil closely, from below upward.

If this technic is closely observed there is little or no hemorrhage, but persistent bleeding points are caught up with artery forceps and ligated in mass.

The advantage of this technic over snare methods is that it is more accurate, and, being more accurate, the percentage of satisfactory results is higher. Secondly, there is less traumatism, which means a shorter and less painful convalescence. Thirdly, This method is applicable to all kinds of tonsils, which cannot be said for other methods.

In regard to adenoidectomy under local anesthesia, the reflexes

are abolished in the same manner as stated above, and, with the soft palate retracted out of the way, the adenoid mass is infiltrated with one of the above-mentioned solutions by means of a long, curved needle. This accomplished, a curvilinear incision is made around the lower margin of the growth, thus freeing it from its lower attachment, so as to facilitate the curette in scooping it out in mass.

The infiltration here seems to assist the engagement and scooping process of the curette, while the incision limits the raw surface made by the removal of the growth and forestalls the hanging of the growth at its lower extremity.

Another important point in adenoidectomy is blocking off the communication between the oropharynx and laryngopharynx by forcing the base of the tongue against the posterior pharyngeal wall with the tongue depressor, thus preventing aspiration or swallowing of the growth.

There is much less bleeding in adenoidectomy under local anesthesia, but in case of a persistent bleeding point which is too high for ligature, the naso-pharynx is plugged with iodoform gauze, which is not to remain longer than twenty-four hours.

In closing, I wish to emphasize the importance of using a sharp knife and curette in doing this work.

CEREBRO-SPINAL MENINGITIS, ESPECIALLY EIGHT CASES IN ONE FAMILY-*

By R. BRUCE WALLACE, M. D., Alexandria, La.

Cerebro-spinal meningitis is an infectious disease of the pia mater and arachnoid membranes of the brain and spinal cord, usually bacterial in origin, but not necessarily. The bacterial, as etiological factors, may be meningococcus, influenza bacillus, streptococcus, tubercle bacillus and *S. mucosus capsulatus*, pneumococcus, staphylococcus and others, but this paper treats entirely with the meningococcus as the causative factor, and particularly the acute form—epidemic cerebro-spinal meningitis.

This disease visited my community, vehemently, producing consternation among the people and paralyzing industries, and when the dreadful assault was successfully combated several homes had sustained loss of their loved ones, and one large family had seen

* Read at the 39th Annual Meeting, Louisiana State Medical Society, New Orleans, April 16, 17, 18, 1918.

half of the members of its household destroyed. There is little wonder, then, that this dreaded disease should not receive audience at such meetings as this one.

Symptoms: The initial symptoms are: The patient feels quite ill immediately; there is marked headache; early projectile vomiting; fever, with a clouding of consciousness and early drowsiness. With these symptoms present (and they should always be suspected when epidemic meningitis is prevailing), sufficient evidence is at hand to make a tentative diagnosis of the disease—*i. e.*, if no other disease with such symptoms boldly proclaims itself. These symptoms are sufficient to warrant lumbar puncture, and if the spinal fluid is cloudy, while needle is in place in the spinal canal, a regular dose of anti-meningitis serum should be injected through the needle; then take the fluid to a laboratory for examination and confirmation of the diagnosis. This is the *modus operandi* of the alert for early detection of the disease. Later there is a rigidity of neck, and with progressive contraction of muscles of neck and back, and retraction to opisthotonos. Kernig's sign is present and is of much diagnostic importance. The pupils are often dilated; delirium supervenes. Eruptions may occur—the petechial, macular and hemorrhagic. These eruptions are usually over shoulders, forearms, thighs and legs, and may cover the entire body, and are pathognomonic when compared with other signs and symptoms. This condition demonstrates the presence of meningococci in the circulation, and then there is present a meningococcic septicemia, or, better, a meningococcemia.

A very high total leucocyte count, say 50,000, is very significant, and, in an epidemic, warrants a lumbar puncture for diagnostic purposes.

Duration: This disease may terminate fatally within twelve hours, or persist from two to four or five days before death intervenes or favorable signs of recovery are demonstrable. The possible rapid termination makes it imperative to diagnose correctly and treat early.

Susceptibility: It is pointed out that any individual may contract the disease, but those with prominent cheek bones, teeth inclining towards median line and well separated, and with lobes of ears clinging close to face are more prone. I have seen two blondes and eight brunettes with the disease, but this is probably not significant. Males and females are about equally divided.

Mode of Transmission: The meningococci enter the system by

way of the naso-pharynx and throat, droplets of sneezed or coughed mucus being caught into them; or they may be directly transmitted by contact, as kissing, or it is possible that drinking vessels used by diseased individuals may disseminate the disease. The organisms produce meningitis, probably by both the hemic and lymphatic routes. Surely, when there is a skin eruption, the method is hematogenous. It seems they may gain entrance to cerebral fluid by the olfactory nerves.

Diagnosis: When meningitis is prevailing, and suggestive signs and symptoms are present, the usual method of approaching the spinal canal to obtain fluid is conformed with—the skin is locally anesthetized and a spinal puncture needle inserted into the spinal canal. If the fluid is clear and flows drop by drop, and upon microscopical examination there are no abnormalities present, we must employ watchful waiting, but if the fluid is cloudy and under pressure—*i. e.*, emits as a small gusher—a diagnosis of meningitis is made and treated accordingly. (The specific organism must be identified and treated relatively, but I am now dealing only with the acute epidemic form.) The organism may be easily seen in a microscopical laboratory. It is a diplococcus, and seen intra- and extra-cellularly, and resembles markedly the gonococcus, with which all of us are familiar, this organism being widely distributed. But if the organisms are not found in a cloudy spinal fluid at the first puncture it does not preclude meningitis at all, as it has been several times demonstrated that the spinal fluid may not yield organisms until the second or third puncture, due to the fact that they have not had sufficient time to be moved from the cerebral fluid to the low level of the lumbar vertebræ. This particularly refers to cases with early diagnosis; plainly, if the diagnosis is late, organisms will be present.

Prophylaxis: As the organisms gain entrance to the system by way of the nose and throat, these two must receive appropriate attention. This consists of spraying same with some good antiseptic solution. Many have been employed, such as Dobell's, chlore-tone inhalant, dichloramine T, solution of argyrol, and such a special prescription as:

Menthol.	
Camphor aa.	gm. 2
Phenol	gm. 1
Iodin.	gm. .25
Liq. albol, qs.	cc. 100

A good atomizer is essential, and should carry both oily or aqueous solutions. Anti-meningitis vaccins have been employed, and were given in my office several times. Their value at this time cannot be vouched for.

Avoidance of public meetings or any gatherings in enclosed places are recommended—an attempt at isolation.

An individual may be a carrier—that is, convey the meningococci in the nose and throat—and such an one may transmit the disease to another; so all carriers must be isolated and treated until well.

All attendants (doctors, nurses and orderlies) should wear gowns, gloves, face and head protectors while on active duty.

TREATMENT: As there is a specific serum for epidemic cerebro-spinal meningitis, this method of treatment is the only consistent one. There are many strains of the meningococcus, probably sixty in all, when the para-meningococcus of Dopter, of Paris, is included, and a polyvalent serum is employed, as elaborated by Flexner. After the diagnosis is established by signs and symptoms and laboratory methods, about 40 cc. or more of spinal fluid are withdrawn from the spinal canal, and 40 cc. of the anti-meningitis serum are slowly injected by the gravity method, requiring from twenty to thirty minutes for flowing in. The serum is first warmed to about 98° to 100° F. The serum has been and can be injected into the canal by means of a large syringe, as put up by some of the sera manufacturers, but this method is not advocated. This injection is repeated every eight hours until improvement is noted, and then once every twelve hours. After the third day, if improvement continues, inject once daily the regular dose—40 cc. of the serum—for from six to nine days. As the temperature usually rises after injection, it is well to give later doses when temperature is normal. The treatment is continued until patient is well, and this fact is ascertained by repeated examinations of the cerebro-spinal fluid. A fluid that is getting less cloudy and demonstrates disintegrated leucocytes is regarded as very favorable. After the second or third injection the fluid is usually free from organisms. When the fluid is clear, and lymphocytes are present, the patient is regarded as cured. Serum, too often repeated, or continued too long, may do actual harm, and judgment must assume priority over set rules.

Some patients may require an anesthetic, as they are often delirious and non-coöperative, and the procedure requires precision.

Small children may be held while administering the serum. The removal of the fluid often increases the intensity of the headache until the serum replaces it, and patients may become violent, and an anesthetic is imperative. The injection of the fluid increases rigidity and makes Kernig's sign more pronounced. The blood pressure is lowered, but I know of no cases presenting symptoms and signs of collapse during the recent epidemic.

It occasionally occurs that no fluid can be obtained from the spinal canal, or, after having been obtained previously, it is impossible to secure more. This is very significant if there are present inequality of pupils, choked disc and derilium, because it probably indicates a blocking of the fluid above the spinal canal. The only ray of hope then is to trephine the skull, tap the left ventricle and leave needle in place till fluid is removed, and then inject the anti-meningitis serum into the space so drained.

The second division of specific treatment relates to the medication to combat the meningococcemia, the most violent infection encountered with the meningococci, and often fatal. This class of cases have the eruptions, viz: petechial, macular or hemorrhagic. This refers to the intravenous injection of the serum to combat the disease in the circulatory system, and is pursued simultaneously with the intraspinal treatment. The patient is desensitized by administering one cc. of the anti-meningitis serum subcutaneously as soon as diagnosis is made or strongly suspected. Obviously, this procedure is to prevent, or at least reduce to a minimum, anaphylactic reaction. Two hours after this subcutaneous injection, 60 cc. of the anti-meningitis serum, diluted with 60 cc. of saline, are administered intravenously. This is repeated once every twenty-four hours until distinct improvement is evidenced, usually for three administrations. After the intravenous injection there is usually a chill and increase in the temperature in about 60 to 70 per cent. of cases so treated.

The treatment of carriers is: isolation until two or more negative cultures have been obtained from swabs from the nose and throat. The nose and throat are treated locally, and cure usually results in two or three days, but isolation may be prolonged for a week or more. A carrier seldom contracts the meningitis. It is significant that attendants of these cases have never contracted the disease.

BRIEF REPORT OF CASES IN THE SAME FAMILY.

This was a family of nine—father, mother and seven children.

The mother and all seven children contracted the disease, resulting in the death of the mother and three sons.

Case I. Male, 18, messenger, became ill January 2, 1918, with violent headache, chill, fever, projectile vomiting and early drowsiness. Soon the mucous membranes were injected, eyes, nose and throat, and a cough soon was present. This was a type suggestive of a grippal meningitis, and cases have been diagnosed as grippe. However, it was the meningococcal type. A macular rash soon appeared on shoulders, arms and thighs, and later covered the entire body surface. Edema of the face was later manifest. Kernig's sign was present. Drowsiness progressed into coma, but finally there was delirium and excitability, necessitating forceful holding of the patient in bed. His left upper extremity became paralyzed. He died, without specific medication, on the second day, no serum being available. This is the only case presenting paralysis before death.

Case II. Female, age 38, excellently nourished. Course of disease very similar; however, she died in about fifteen hours from time of onset. She received two intraspinal injections of anti-meningitis serum, dose of 30 cc., twelve hours apart.

Case III. Female, age 12. Usual onset. Spinal fluid was slightly cloudy, but under much pressure. Serum, 30 cc., was immediately administered. Examination of the fluid demonstrated practically no leucocytes (polymorphonuclear), but was teeming with meningococci. This case was immediately adjudged as certainly fatal—no effort to phagocytosis. To my delight, she began to improve, after the fourth injection, and completely recovered, and is now helping in the household.

Case IV. Female, age five. Regular onset, and similar diagnosis. Treatment was 15 cc. of anti-meningitis serum every twelve hours. She improved slowly, being treated vigorously for four days. After several days of continued improvement, and apparent recovery, she relapsed. A careful examination of blood for malaria and chest for pneumonia was negative. The spinal fluid again demonstrated the presence of meningococci, and intraspinal injections of the serum were employed, as when first beginning treatment. She is convalescing very slowly, and even now (April 15, 1918) is being taught to walk again.

Cases V and VI. Males, ages 14 and 16, respectively. Presented typical symptoms and received injections into the spine, 30 cc. every twelve hours. Case V died in coma in eighteen hours, and case VI died in delirium and exhaustion in about sixty hours.

Cases VII and VIII. Ages 10 and 18, respectively, and female and male, respectively. Received intraspinal injections as soon as first symptoms were noted, a Red Cross nurse now being present. Early and repeated dose of 30 cc. every twelve hours produced a cure, with no grave symptoms at any time.

Another case, not in this series, had acute keratitis, and is now probably totally blind. Another had hemorrhages from throat before death.

The intravenous injection indication (meningococcemia) was not known, or surely ascertained by me in the early part of January, 1918, but I surely would employ these injections now.

CONCLUSIONS.

Acute cerebro-spinal meningitis of meningococcic origin produces about 50 per cent. mortality. Early and thorough treatment with a good polyvalent anti-meningitis serum, both intraspinal and intravenously, are demanded.

It seems that certain individuals may be highly susceptible, and this susceptibility may be transmitted to their progeny.

DISCUSSION ON THE PAPER OF DR. WALLACE.

Dr. J. A. Packer, Alexandria: I have seen a few cases of cerebro-spinal meningitis, and especially the youngster that the doctor referred to in his paper. This child is learning to walk again and to use his muscles. As I go by the Isolation Hospital each day I see this child, and her recovery has been something that is short of wonderful to me. I have reference now to the three-year-old child.

As to the prevention of cerebro-spinal meningitis, I would like to have the members of the State Society discuss that phase of the subject freely, because we all want to learn something about it. I have children myself. Dr. Wallace treated me for la grippe at the time we had many cases of meningitis. I have had about seven cases of meningitis, which I have treated in association with Dr. Wallace, and we called in two gentlemen from the United States Public Health Service—Dr. Trumper and Dr. Yarbrough—who have been successful with our cases of meningitis at the Isolation Hospital. We called them to decide on the diagnosis of a case. In my own case, he wanted to be sure whether or not I had meningitis instead of la grippe.

As to the prevention of meningitis, Weaver has advised the use of gauze over the mouth and nose, and, so far as we know, that is all that will help us. The use of Dobell's solution, argyrol and various antiseptics, applied to the mouth and nose, are of no avail as far as we are able to tell.

As to the diagnosis of meningitis, Dr. Wallace has already emphasized the point that we cannot make a diagnosis of this disease without doing spinal puncture, and I would advise every one who has any occasion to even suspect meningitis to resort to spinal puncture early and have the fluid that is withdrawn examined by a competent bacteriologist.

The principal reason for my getting up was to ask every one in the Society to discuss the method of prevention of meningitis, and I sincerely hope that they will see fit to do so.

As to the carriers, Dr. Wallace brought out a method of treating those carriers, but we are not able to find out who the carriers are. The youngster who had two sisters developed the disease. He had been working in two offices. In one office he worked up until Thursday, quit that office and went to another office, and one sister developed the disease. Dr. Yarbrough did not detect the carrier, for some reason, and their brother was overlooked in the matter. One sister, eighteen years of age, developed meningitis on Thursday night, and then a little later, the subsequent Tuesday night, her sister developed the disease. Later, Dr. Yarbrough found that the brother was a carrier. He had been over-

looked in the matter, and it was found another case developed in the two offices.

I would thank any one for discussing the prevention of meningitis and the control of the carriers.

Dr. A. C. McLamore, Coughatta: We not infrequently fail to find meningococci in cases in which we are almost sure there was meningitis before death.

Dr. Allan C. Eustis, New Orleans: This is a very important subject at the present time, and there has been considerable progress made in the therapeutics of epidemic meningitis since the war, especially in the British Army, so that another point towards improving therapeutic procedures will be an excuse for mentioning a procedure I have followed, and which seems to be based on sound logic—namely, that in any other condition in which we have intracranial pressure increased we should attempt to relieve that intracranial pressure. We know that a great part of the headache that we have in epidemic meningitis in the early stages is due to this increased intracranial pressure; therefore, in our therapeutic procedures we should attempt to leave that individual, after injection of the serum, with as normal an intracranial pressure as possible. In those cases in which I have had occasion to inject intraspinally anti-meningococcic serum, instead of withdrawing 40 cc., which is usually done, and then injecting your serums, I have found it far better to withdraw the fluid until the serum begins to drop normally, and then count from that point to forty, or, if you find any signs of collapse, stop at thirty, but at any rate, when we inject forty more, we will leave the patient with a normal intracranial pressure. That point should be remembered. The more increased intracranial pressure we have, the greater the chance we have of doing damage to the arachnoid membrane.

There is one other point that I want to call attention to which was brought forth by the remarks that Dr. Wallace made—namely, that carriers do not develop the disease. I grant that they do not usually develop the disease. About four years ago I had a very interesting case, in conjunction with Dr. Hummel and Dr. Lynch. This patient, a woman, had had an antrum infection; a radical operation had been performed upon her by Dr. Lynch, and she was going to his office every day. One day she complained of a chill, fever, headache, and, in making a leukocyte count, I found a leukocytosis of 30,000. We thought it was simply an associated toxemia. In going over her thoroughly we found a positive Kernig sign. The headache was excruciating. We called in Dr. Hummel, and we agreed to take her up to the Touro and do an intraspinal puncture. We did that, and on the operating table we found a cloudy serum, and I suggested that we see what it is, not having any idea of finding meningococci; but I took the serum, and we found on examining it numerous intracellular meningococci. A diagnosis of meningitis was made. We injected her at once, gave her 20 cc., and the interesting point was that her antrum gave a pure culture of the same organism, but she got well. We gave her three or four intraspinal injections twelve hours apart. Fortunately, we happened to strike the strain she had, and she made a complete recovery. An interesting point is that her antrum continued to give positive culture of meningococci for ten days after all symptoms of meningococcus infection in the spinal cord had been overcome. She was capable, therefore, of conveying the organism.

To our men who are doing nose and throat work I would urge that it is good practice for them to make a habit of making cultures, sending

the pus to the pathologic laboratory, particularly in infected naso-pharyngeal cases.

Dr. C. P. Gray, Monroe: I would like to ask Dr. Wallace if he has had any experience with, or has used, the method of washing out the spinal canal with normal saline solution?

Dr. F. R. Gomila, New Orleans: I would like to ask Dr. Wallace whether smears were made of the other members of the family after the first case was diagnosed in that family? I would like to say it is a very good idea to make smears in all cases of the naso-pharynx, and, as a rule, if you find Gram-negative diplococci in the smears, you can come near making a diagnosis from that alone, without even awaiting for spinal puncture.

Another point is with reference to sending all specimens to the laboratories for diagnosis. The majority of men from the country do not realize the importance of sending fluid to the laboratory man in as sterile condition as possible, because, very often, we get saprophytes and other organisms that destroy the meningococcus and the cells, and in that way you leave the laboratory man unguarded and do not give him a chance to make a good diagnosis.

Dr. Wallace (closing): Around Alexandria and its vicinity we are all pretty well read on this subject. We are familiar with the text-book description of this disease, but unfortunately we were filled with fear when we first injected the serum. When I made the first injection I was afraid the patient was going to collapse on account of the lowering of blood pressure, but this fear was soon removed and these patients did not collapse, as I expected they would at first. It is easy to go in boldly, to get the patient in a good position to insert the needle. Usually the amount of fluid let out is about 60 cc., and injecting 40 cc. of serum. Sometimes these patients will complain of a great deal of pain; they will cry out with pain when the pressure seems to be much relieved, and we inject the serum, and the headache is immediately relieved. That has been noted a number of times in going over these cases.

One point I want to bring out is with reference to the choice of serum. Not all sera which we get is effective. It is not efficacious. While I am not boosting the Flexner serum, it is by far the best serum we can use, and is the most reliable. If we can get and use the Flexner serum we can obtain good results. On the other hand, when we inject some of the other sera we do not think we have done all we can, but it is very essential to select a proper serum.

As to the question of bacilli being demonstrable in the fluid before death, so far as I know they were, unless blocked up above the spinal canal. I should think, with a late death, we would find them, without a single exception.

Dr. Eustis mentioned the point that carriers never contract the disease. Carriers usually do not contract the disease, although some of them do.

In answer to Dr. Gray, I will say that I never flush the spinal canal. Smears were not made from all of these patients. They were all given sprays.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

Edited by Dr. P. T. TALBOT, Secretary-Treasurer.

The annual meeting of the Louisiana State Medical Society was held in New Orleans on April 16-18, inclusive. Considering the many difficulties on account of the national crisis, we had a very satisfactory meeting. The attendance was very good, and the scientific program was one of the best we have ever had, bringing out considerable discussion. We hope the members enjoyed the many pleasant social features for their entertainment, which had been so ably arranged by the Committee on Arrangements, with Dr. A. E. Fossier, chairman.

Shreveport, La., was chosen as the next meeting-place; date will be announced later. The following officers were elected for the ensuing year: President, Dr. W. H. Knolle; New Orleans; first vice-president, Dr. G. M. G. Stafford, Alexandria; second vice-president, Dr. Amédée Granger, New Orleans; third vice-president, Dr. A. E. Fossier, New Orleans; secretary-treasurer, Dr. P. T. Talbot, New Orleans.

The Society especially regretted to lose the able services of its former secretary, Dr. L. R. DeBuys, who had served the Society faithfully for many years.

There was considerable war spirit manifested along with the business side of the meeting. The addresses of Major Isadore Dyer, M. R. C.; Col. Henry Page, M. C., and Major Frank Simpson, M. R. C., were very timely, and their messages were full of facts concerning the immediate and future urgent needs of our country in regard to medical officers.

Resolutions brought in before the general meeting of the last session exemplified the spirit of patriotism and the determination of the medical profession of our fair State to stand as a unit behind our government and to fulfill their portion of duty in bringing this horrible war to a satisfactory and speedy termination. There was no evidence of any slackers present.

At this meeting we were notified by the American Medical Association that, upon request from the Surgeon General's office, they had promised to secure the immediate addition of 7,000 medical officers for the Army and Navy in the Medical Reserve Corps. The

American Medical Association desired the immediate coöperation and assistance of the State and component societies to fulfill their pledge to the Surgeon General's office. Never has such a call been made upon organized medicine. Our duty is plain. Each should take an immediate inventory of himself and find out where he stands in relation to this important matter. Representing all the noble elements of organized medicine, the members of the State Medical Society could not fail to respond to this appeal.

Your secretary-treasurer, pursuing the request of the State Society in answer to the appeal from the American Medical Association, had occasion to attend the special National Conference of State Secretaries, held in Chicago, April 30, 1918. This meeting was called by the American Medical Association for the specific purpose of discussing ways and means necessary to secure the immediate enlistment of medical officers of the number required and asked by the Surgeon-General. We had a most enthusiastic and profitable meeting from every standpoint. In this undertaking, the national organization means to live up to its promise, and proposes to secure the coöperation of the various State and subsidiary societies in organized medicine. The additional quota for the State of Louisiana will be in the neighborhood of 200. Resolutions were, therefore, adopted requesting the president of the various State Medical Societies to appoint a State committee, to be known as the War Council of the State. This committee will have charge of the work in the State, and work in coöperation with other subsidiary committees appointed to represent the various Congressional Districts and parish organizations.

The State War Council will work in strict accord with the National War Council of the American Medical Association. This gigantic propaganda undertaken by organized medicine will be started as promptly as possible in our State, and every individual member should begin preparing himself for the big drive. The Surgeon General and our country need more medical officers. Your secretary-treasurer told the conference in Chicago that Louisiana will not be found wanting in this sacrifice. So let all of us put our shoulder to the wheel and again go "over the top."

NEWS AND COMMENT

THE AMERICAN MEDICAL ASSOCIATION will hold its sixty-ninth annual meeting in Chicago, June 10-14, 1918. Clinics covering every phase of medicine, surgery and specialties will be conducted by eminent clinicians. The alumni and section dinners will be held on Wednesday evening, June 11, from 6 to 8 o'clock, so as not to conflict with other planned events. For information concerning the meeting, address Committee of Arrangements, 25 East Washington Street, Chicago, Ill.

THE AMERICAN ASSOCIATION OF ANESTHETICS will hold its sixth annual meeting in Chicago, June 9-10, 1918. The scientific sessions will occur on the evening of the A. M. A. clinic days, so that those who are in Chicago at the time of the A. M. A. meeting may attend without missing any of the sessions of their own sections. Dr. F. H. McMechan, Avon Lake, Ohio, will furnish any further information regarding membership, sessions and banquet reservations.

COURSE OF STUDY FOR MOSQUITO FIGHTERS.—The Brooklyn Institute of Arts and Sciences announces a course of instruction at the Biological Laboratory at Cold Springs Harbor, Long Island, designed to train persons for practical work in the elimination of flies and mosquitoes. The course, which begins on July 3, to continue for six weeks, will include surveys and mapping, identification of species, life-history of the different species of mosquitoes and flies, specifications for treatment and elimination.

VENEREAL CLINICS.—According to the *Social Hygiene Bulletin*, the American Red Cross has recently made allotments for the establishment of venereal clinics at Newport News, Va.; Charlotte, N. C.; San Antonio and El Paso, Texas; Louisville, Ky., and Chillicothe, Ohio, under the direction of the sanitary officers of the United States Public Health Service. A social worker will be assigned to each from the United States Army.

NATIONAL TUBERCULOSIS ASSOCIATION MEETING.—It is announced in the *Bulletin of the National Tuberculosis Association* for April that the name of the National Association for the Study and Prevention of Tuberculosis has been changed to the National Tuberculosis Association. The fourteenth annual meeting of the organization will be held in Boston, June 6, 7 and 8, 1918, at the Copley-Plaza Hotel, and on the evening of the first day there will be a meeting of the American Sanatorium Association. The

preliminary program is being sent out from the executive office, the new address of which is 381 Fourth Avenue, New York.

PAN-AMERICAN CONGRESS TO MEET AT BUENOS AIRES.—Official notice has been sent out that, according to the unanimous vote at the seventh congress held in San Francisco, the eighth annual congress will be held at Buenos Aires in 1919, the exact date of which will be given later.

SANITARY CONFERENCE.—Under the presidency of Dr. Walter S. Rankin, Raleigh, N. C., a conference of health and sanitation experts of the South was held at Birmingham, Ala., March 25 and 26. The principal subjects discussed were soil pollution and its prevention, the diseases arising from soil pollution, including typhoid fever, dysentery and hookworm diseases, and compulsory sanitary ordinances.

LOUISIANA STATE MEDICAL SOCIETY ELECTS OFFICERS.—At the recent meeting of the Louisiana State Medical Society, the following officers were elected for the ensuing year: Dr. Wilkes H. Knolle, New Orleans, president; Dr. G. M. G. Stafford, Alexandria, first vice-president; Dr. Amédée Granger, New Orleans, second vice-president; Dr. Albert E. Fossier, New Orleans, third vice-president; Dr. Paul T. Talbot, New Orleans, secretary-treasurer. Councilors from the congressional districts: Drs. Paul J. Gelpi and Homer J. Dupuy, New Orleans; Dr. Beverly W. Smith, Franklin; Dr. Joseph E. Knighton, Shreveport; Dr. Jesse L. Adams, Monroe; Dr. James J. Robert, Baton Rouge; Dr. E. M. Ellis, Crowley, and Dr. E. Lee Henry, Lecompte.

SANITARIANS NEEDED.—The United States Public Health Service is greatly in need of the services of competent sanitarians, particularly medical officers, sanitary engineers and scientific assistants. Salaries vary from \$1,800 to \$2,500 per annum. Applicants should address the Surgeon General, U. S. Public Health Service, Washington, D. C., stating in full experience and training which they have had.

WOMEN BACTERIOLOGISTS WANTED.—About one hundred women bacteriologists to take the place of men in the cantonment laboratories are wanted. The services of the men are demanded for the hospital units which are going abroad, and their places at the home cantonments are to be filled by women. Applications are arriving from all the camps asking for as many as nine women. A good, practical knowledge of clinical pathology and diagnostic bacteriology is required for the work. The present salary is \$720, with main-

tenance, and \$1,200 without, with transportation furnished by the Government. Applications may be made to the office of the Surgeon General, Washington, D. C.

UNIVERSITY OF OREGON'S NEW MEDICAL BUILDING.—The laying of the corner-stone of the new medical building of the University of Oregon Medical School, which was donated by the Union Pacific Railroad Company, took place in Portland on May 1, 1918, with appropriate exercises. Ernest H. Lindley, Ph. D., of the University of Idaho, was orator of the day.

SPECIAL CLINIC FOR SYPHILIS.—The New York Skin and Cancer Hospital has inaugurated a syphilitic clinic on Tuesdays, Thursdays and Saturdays from 11 to 1 p. m., in addition to the daily clinics held. On Mondays and Thursdays, from 8 to 9 in the evening, this clinic will be held for the poor only, who are employed during the day.

TO STANDARDIZE HOSPITALS.—The Board of Trustees of the American Medical Association appropriated funds at a recent meeting to permit the Council on Medical Education to extend its work of standardizing and enlisting such hospitals as, on investigation, shall be found in position to furnish acceptable internships for medical graduates. A list of such hospitals was issued by the Council in 1914, which was revised and reissued in 1916. Another revision will appear this summer.

THE PRUSSIAN WAY.—The *Medical Brief* quotes the following from Major Simon Flexner in a recent address: "All news of new methods of treating diseases and alleviating suffering of the wounded in the German Army is carefully eliminated from German medical journals circulating outside that empire. Nothing could be more opposed to the spirit of the medical fraternity as a whole. Physicians have always considered it disgraceful to withhold anything that would be of benefit to the sick and the suffering. This is to-day, more than ever, the conviction of reputable members of the profession. But nothing could be more in conformity with the spirit of Prussianism as a whole. Humanity does not exist for it. It grudges the cup of cool water to the parched lips of a wounded or dying opponent of militarism and autocracy. Innate brutality could no farther go—even in Prussia."

SCARCITY OF QUININ.—Camp Lee, Va., is feeling the effects of the scarcity of quinin in this country, and orders have been issued that it shall only be used for the treatment of malaria. Even in

this case the diagnosis of malaria shall be confirmed by microscopic examination.

CAMPAIGN AGAINST COUGHING, SPITTING AND SNEEZING.—Under the direction of Surgeon General Gorgas, the Army Medical Corps is undertaking an educational campaign against promiscuous coughing, spitting and sneezing. The fullest coöperation of the press and the public in keeping constantly before our soldiers and the public the menace which these pernicious habits offer is necessary for the success of the campaign. The Surgeon General makes the statement that “respiratory diseases have caused practically all the sick and death rate in the nation’s new armies, and this is the reason for a campaign which will be instrumental in diminishing the incidence of pneumonia, measles, diphtheria, mumps, meningitis, infantile paralysis, influenza and tuberculosis.

THE LARGEST MILITARY HOSPITAL.—France has now in process of construction the largest military hospital in the world, which, when completed, will have 20,000 beds. The British Government has a hospital with 16,000 beds.

SITE FOR LEPROSARIUM.—Surgeon General Rupert Blue, of the Public Health Service, has appointed a committee to select a site for the proposed leprosarium for which Congress in 1917 appropriated the sum of \$250,000. The committee consists of Surgeon Geo. W. McCoy, director of the Hygienic Laboratory; Dr. William C. Woodward, health officer of the District of Columbia, and Dr. Chas. V. Chapin, health commissioner of Providence, R. I.

HYGIENE SCHOOL FOR POLICEMEN.—Indianapolis is to have a hygienic school for policemen, with Dr. H. G. Morgan, secretary of the Board of Health, as instructor. The course is for the purpose of preparing the police force in supervising conditions affected by alleys and premises, and aims to teach the primary precautions against disease and bad living, as well as proper sewage disposal and proper housing conditions.

A STATEMENT OF RED CROSS WORK.—A statement concerning the work of the Red Cross, read at the March 10 meeting of the General Medical Board of the Council of National Defense, showed that there are twenty base hospitals on active duty abroad and fourteen others mobilized of nineteen certified as ready for immediate service. Distribution of sweaters to soldiers and sailors from all Red Cross sources totals at least 1,250,000. Authority for Red Cross Work within camps has been conferred by an official

order signed by the Secretary of War. Contracts for convalescent houses in four camps have been let and others will soon be signed. Twenty-seven sanitary units coöperated with Federal and State authorities in February in seventeen different States. The four laboratory cars, "Reed," "Pasteur," "Lister" and "Metchnikoff," have been turned over to the Army Medical Corps. Venereal clinics are now in operation in seventeen camp cities.

THE AMERICAN THERAPEUTIC SOCIETY will meet in Richmond, Va., June 7 and 8, under the presidency of Dr. Wayne Babcock, of Philadelphia.

PERSONALS.—Dr. Dalton H. Trépagnier, M. R. C., of New Orleans, was recently promoted to the rank of major and is at present in command of Field Hospital No. 36, Chickamauga Park, Ga. Major Trépagnier is a graduate of Tulane University School of Medicine, class 1903.

Dr. J. H. Kennerly, dean of the faculty of Washington University Dental School, was elected president of the Dental Faculties of the Association of American Universities at its meeting at Pittsburgh, Pa.

REMOVALS.—Lieut. T. T. Batson, from Charity Hospital, New Orleans, to Base Hospital, Camp Beauregard, La.

Dr. C. L. Brewster, from McNary to Alexandria, La.

Dr. Wm. Schulze, from Monroe, La., to Hagerstown, Md.

Dr. R. B. Austin, from Fernwood to Tylertown, Miss.

MARRIED.—On April 21, 1918, Lieut. T. T. Batson, M. R. C., of New Orleans, to Miss Alice Katherine Pinero, R. N.

DIED.—On May 8, 1918, Dr. C. Wm. Groetsch, of New Orleans, assistant city coroner and active practitioner, aged 42 years.

BOOK REVIEWS AND NOTICES

A Treatise on Orthopedic Surgery, by Royal Whitman. Lea & Febiger, Philadelphia and New York, 1917.

Many of the chapters of this excellent book have been rewritten, and all have been added to. The work is similar to the previous editions in many respects, and covers the field of orthopedic surgery quite thoroughly. The chapter on infantile paralysis is up to date, and the tried-out operations of tendon transplantations are well described and illustrated. It is a pity that more attention was not paid to the arthritides, especially of the adult, as they are demanding more attention every day. The part dealing with bone grafts and transplants, though good, could have been more extensive, and consequently more valuable; also the chapter on Military Orthopedics. As a reference book for the general practitioner

it is excellent; as a text-book for the student it is to be recommended, and for the orthopedic surgeon it certainly is desirable. Some of the subjects could have been cut down without harm, while others could have been greatly improved by more detail. Taking it all in all, it still holds first place as the best single volume in English on the subject.

PAUL A. McILHENNY.

The Third Great Plague, by John H. Stokes, A. B., M. D. W. B. Saunders Company, Philadelphia and London, 1917.

This little book is designed more for the general public, in order to stimulate an interest in syphilis and in the handling of the various problems incident thereto.

It is written in a conservative vein, free from exaggerations and clap-trap, and should make the impression desired on the reader of average information and intelligence.

We are pleased to note that the author lays stress upon the fact that the Wassermann test is not an infallible one for syphilis, while he is careful to explain its real assistance in diagnosis and as a guide in treatment.

In a laudable effort to correct misapprehension as to the great danger of the intravenous injection of salvarsan, we think Dr. Stokes has erred to some extent in the opposite direction.

The purpose of the book is praiseworthy, and its circulation among the laity should be encouraged. C. C.

War Nursing, by Minnie Goodnow, R. N. W. B. Saunders Company, Philadelphia and London, 1918.

Intended as a text-book for the auxiliary nurse, this volume will appeal to the large number of women who are preparing themselves to aid in war nursing. It will be useful to supplement the information already obtained by means of "first-aid" courses and the like. It is too elementary in character to interest the trained nurse. C. C.

Military Medical Administration, by Col. Joseph H. Ford, B. S., A. M., M. D. P. Blakiston's Son & Co., Philadelphia.

The best way of indicating the scope of this work is to name the titles of its twenty chapters: Principles of military medical administration. The medical officers' vocations. The regimental surgeon. The ambulance company. The field hospital. The camp hospital. Sanitary squads. The division surgeon. The evacuation of the sick and wounded. Hospital trains. Hospital ships. The base hospital. The sanitary service of camps. The sanitary service of ports. The department surgeon's office. The public health service. Medical supply depots. The examination of recruits. Voluntary aid. Malingering.

The most valuable manner of endorsing the work is to state it has the approval of Surgeon General Gorgas.

When we add that the volume includes matter derived through the personal experience of its author before and during the present war we shall have said enough to convince all those who are going into service, or should go into service, or would like to go into service, that it is worth while to get this book. C. C.

PUBLICATIONS RECEIVED

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Lessons from the Enemy: How Germany Cares for Her War-Disabled. Medical War Manual No. 5. By John R. McDill, M. D., F. A. C. S.
Medical War Manual No. 6: Laboratory Methods of the United States Army. Compiled by the Division of Infectious Diseases and Laboratories.

Syphilis and Public Health, by Edward B. Vedder, A. M., M. D., Published by permission of the Surgeon-General, United States Army.

Medical Service at the Front, by Lieut.-Col. John McCombe, C. A. M. C., and Capt. A. F. Menzies, M. C., C. A. M. C.

F. A. DAVIS COMPANY, Philadelphia, 1918.

Modern Operative Bone Surgery. With Special Reference to the Treatment of Fractures. By Charles George Geiger, M. D.

W. B. SAUNDERS & CO., Philadelphia and London, 1918.

The Surgical Clinics of Chicago. April, 1918. Vol. 2, No. 2.

WM. WOOD & CO., New York, 1918.

Tropical Diseases. A Manual of the Diseases of Warm Climates. By Sir Patrick Manson, G. C. M. G., M. D., LL. D. Sixth edition, revised throughout and enlarged.

P. BLAKISTON'S SON & CO., Philadelphia, 1918.

A Manual of Histology, by Henry Erdmann Radasch, M. Sc., M. D.

JOHN WILEY & SONS, Inc., New York, 1918.

Animal Parasites and Human Disease, by Asa C. Chandler, M. S., Ph. D.

LEMCKE & BUECHNER, New York City, 1918.

Diseases of the Heart and Blood Vessels, by Thomas E. Satterthwaite, A. D., M. D., LL. D., Sc. D.

A. C. McCLURG & CO., Chicago, 1918.

Long Heads and Round Heads, or What's the Matter With Germany? by Wm. S. Sadler, M. D.

GOVERNMENT PRINTING OFFICE, Washington, D. C.

Public Health Reports. Vol. 33, Nos. 14, 15, 16, 17, 18 and 19.

Service and Regulatory Announcements. United States Department of Agriculture, Bureau of Chemistry.

United States Naval Medical Bulletin. April, 1918.

Report of Commissioner of Health of Porto Rico, 1917.

MISCELLANEOUS:

Annual Report of the United Fruit Company Medical Department.
(Press of Geo. H. Ellis, Boston.)

The Institution Quarterly. March 31, 1918. (Department of Public Welfare, Springfield, Ill.)

Quarterly Bulletin of the Louisiana State Board of Health. Vol. IX, No. 1. (New Orleans, March, 1918.)

A Review of the Rockefeller Foundation, by Geo. E. Vincent.

Report of Sanitary Measures in India in 1915-1916. (Published by His Majesty's Stationery Office, London, 1918.)

REPRINTS.

The Mortality of Childhood, by Louis I. Dublin, Ph. D.

Blister Beetles as a Public Nuisance, by Albert J. Chalmers, M. D., F. R. C. S., D. P. H., and Harold King, F. L. S., F. E. S.

Mycetoma and Pseudomycetomatous Formations, by Albert J. Chalmers, M. D., F. R. C. S., D. P. H., and Captain R. G. Archibald, M. B., D. S. O., R. A. M. C.

Malarial Mimicry, by Sagh (Major) A. E. Kamar.

Forma Suprarenal de Impaludismo, by Dr. Clementino Fraga.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for April, 1918.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	1	2	3
Intermittent Fever (Malarial Cachexia)			
Smallpox			
Measles	1		1
Scarlet Fever			
Whooping Cough	5	1	6
Diphtheria and Croup	1		1
Influenza	5	7	12
Cholera Nostras			
Pyemia and Septicemia	1		1
Tuberculosis	63	65	128
Cancer	16	7	23
Rheumatism and Gout	2	3	5
Diabetes	4	1	5
Alcoholism			
Encephalitis and Meningitis	2	1	3
Locomotor Ataxia	1		1
Congestion, Hemorrhage and Softening of Brain	20	10	30
Paralysis	2		2
Convulsions of Infancy		1	1
Other Diseases of Infancy	12	5	17
Tetanus	1		1
Other Nervous Diseases	7	2	9
Heart Diseases	60	49	109
Bronchitis	2	4	6
Pneumonia and Broncho-Pneumonia	32	33	65
Other Respiratory Diseases	1	1	2
Ulcer of Stomach	1		1
Other Diseases of the Stomach		2	2
Diarrhea, Dysentery and Enteritis	23	20	43
Hernia, Intestinal Obstruction	5	3	8
Cirrhosis of Liver	7	5	12
Other Diseases of the Liver	5	2	7
Simple Peritonitis	1		1
Appendicitis	6	1	7
Bright's Disease	25	26	51
Other Genito-Urinary Diseases	11	6	17
Puerperal Diseases	2	3	5
Senile Debility	1		1
Suicide	3	1	4
Injuries	23	17	40
All Other Causes	25	28	53
TOTAL	377	306	683

Still-born Children—White, 13; colored, 20; total, 33.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1,000 per Annum for Month—White, 16.16; colored, 35.31; total, 22.19. Non-residents excluded, 18.46.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure. 29.95

Mean temperature. 68

Total precipitation. 10.73 inches

Prevailing direction of wind, south and southeast.

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DT.



